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# FORTY-FOURTH ANNUAL REPORT

OF THE

~~DUPLICATE~~

## DEPARTMENT OF MARINE AND FISHERIES

1911

## MARINE

PRINTED BY ORDER OF PARLIAMENT



OTTAWA

PRINTED BY C. H. PARMELEE, PRINTER TO THE KING'S MOST  
EXCELLENT MAJESTY

1911

[1911-1912.] Price, 25 cents.









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[No. 21—1912.]

R





*To His Royal Highness, Field Marshal, Prince Arthur William Patrick Albert,  
Duke of Connaught and Strathearn, K.G., K.T., K.P., &c., &c., &c., Governor  
General and Cammander-in-Chief of the Dominion of Canada.*

MAY IT PLEASE YOUR ROYAL HIGHNESS:

I have the honour to submit herewith for the information of Your Royal Highness and the Parliament of Canada, the Forty-Fourth Annual Report of the Department of Marine and Fisheries, Marine Branch.

I have the honour to be,

Your Royal Highness's most obedient servant,

J. D. HAZEN,  
*Minister of Marine and Fisheries.*

DEPARTMENT OF MARINE AND FISHERIES,  
OTTAWA, NOVEMBER, 1911.







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C.G.S. *Stanley* cutting icebound vessels out of Bridgewater, N.S.



# REPORT

## OF THE

### DEPUTY MINISTER OF MARINE AND FISHERIES

---

To the Honourable L. P. BRODEUR,  
Minister of Marine and Fisheries.

SIR,—I have the honour to report on the transactions and service of the Marine Branch of the Department of Marine and Fisheries for the fiscal year ending March 31, 1911.

My appointment by Order of the Privy Council as Deputy Minister of the Marine and Fisheries Department took place the 8th June, 1910, and I entered upon the duties of my office immediately.

At the time of the establishment of the Department of Naval Service in 1910, several branches of this department were detached and became branches of that department, consequently, several reports which were formerly included in the Marine report will now be found in the annual report of the new department. The branches referred to are the hydrographic, wireless telegraphy, tidal survey and naval militia.

Some items of expenditure, in connection with these branches for work and service begun before the transfer, have necessarily been included in the statement of expenditure of this department for the fiscal year, 1910-11.

Careful, but ample estimates were prepared for proposed work and improvements along the coasts and in harbours of the Dominion, but the early setting in of winter in December, 1910, interrupted operations that would otherwise have been continued until a later period. This was the case in connection with lighthouse and coast service, ocean and river service and the work in the St. Lawrence river ship channel. An examination of the statement of appropriations of parliament and expenditure, included in this report, will show that the expenditure has been much less than the appropriations. The total appropriations, for Marine and Fisheries, amounted to \$6,196,723.62 and the total expenditure to \$4,798,988.18; the unexpended balances therefore amount to \$1,397,735.44. The fishing bounty expenditure, which amounted to \$159,166.75, is not included in the above total as the money is not appropriated by parliament, but is derived from interest on an amount paid to the government, by the United States, as an award for use of the inshore fisheries of the maritime provinces.

An analysis of the financial statement, will also show that the principal unexpended balances relate to appropriations for construction of lighthouses and construction of two steamers. Some delays occurred through difficulties of transportation

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of material for lighthouse construction, and the new aids to navigation, along the St. Lawrence ship channel, have cost less than was anticipated. Contracts for the new steamers have been entered into, one for the lighthouse and buoy service on the coast of British Columbia and one to be employed in the ship channel, St. Lawrence river, inspection. Plans and specifications have been prepared for a buoy steamer to replace the *Shamrock* in the St. Lawrence river, between Montreal and Quebec.

Apart from the question of expenditure, the lighthouse construction embraced the erection, by the Engineer's branch, of light towers, fog alarm buildings, keepers dwellings, oil sheds and boat houses. The selection of sites in localities to make effective the lights for vessels in various waters received careful attention. Improvements were also made at a number of light stations in order to prepare certain light-houses for the installation of larger lanterns, containing lighting apparatus of greater magnitude. In addition to this, repairs and enlargements were undertaken and in many cases completed, at old stations. Personal inspection was made of the work by the Chief Engineer and officers attached to his branch at Ottawa, when office duties permitted, and district engineers attended to inspection in their several districts. At the less important buildings constructed, local inspectors were employed to see that the work was performed according to contract, and departmental foremen had in charge the work where it was done by days work.

The construction of several new fog alarm buildings, together with the installation of machinery and power plant, engaged the attention of the Chief Engineer's branch. The establishment of a complete marine depot at Prince Rupert, has been under contemplation by the department and comprehensive plans have been prepared of offices, storehouses, power houses, wharves, tramways, electric lighting plant, water supply, machinery, equipment and furnishings. Tenders for the grading of the site and complete construction of the depot, have been considered, a contract made and the work has been begun. An officer of the Chief Engineer's branch familiar with the plans, has been entrusted with the supervision of the work and remains at the location constantly.

The ordering of new illuminating apparatus and installation came under the supervision of the Commissioner of Lights and Buoys. The principal work of his branch consisted of substituting modern dioptric lights with petroleum vapour, as an illuminant, at the major coast lights for older and less efficient apparatus and illuminants. This work of establishing illuminating apparatus of a more powerful and modern contrivance, has been receiving the attention of the department for three years, and the result, has been highly satisfactory to navigators and shipowners. As the work has progressed it has become more evident that the continuation of this work is necessary; it will greatly improve the lighting system and make it far superior to the old catoptric system formerly in use. The extension of dioptric lighting apparatus is taking place at several important stations at present.

During the past fiscal year, the branch of the Commissioner of Lights has given attention to the repairs and maintenance of lighting apparatus throughout the Dominion, also to automatic acetylene beacons, unwatched lights, automatic acetylene buoys and submarine warnings. The work of placing, maintaining and repairing these aids has been under the immediate control of the agents of the department in



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the several provinces and the various superintendents of lights have supervised the work, inspected the lighthouses and delivered supplies necessary for their upkeep.

The Dominion steamers attached to the agencies employed in the buoy and lighthouse service have been regularly inspected by the inspectors to whom the work has been assigned; all necessary repairs were made and equipment and furnishings required were supplied. The transportation of building materials for lighthouses, delivery of supplies for maintenance of the lights, throughout the Dominion, and placing of coast buoys has been performed as usual. Steamers engaged in other services have received similar attention; the expenditure in connection with the upkeep of all Dominion steamers has been kept well within the appropriation of parliament for this particular service.

Construction of steamers, boats, barges and vessels, intended for a more thorough carrying out of the departmental service generally, and for replacing several vessels found unsuitable for the work in which they have been hitherto engaged, has progressed. Some of these vessels have been constructed at the Sorel shipyard and others are now being built under contract. The expansion of the lighthouse and buoy system along our coast and on the great lakes and rivers; and work in the St. Lawrence river ship channel, made it necessary to add to the number of Dominion steamers.

The changes in the pilotage system of the St. Lawrence to which you have given personal attention have been attended with beneficial results. The officers, who have direct supervision and responsibility of examinations of pilots and the management of pilotage funds, have reported upon the transactions of the year. The importance of still further raising the standard of qualifications of pilots and requiring faithful performance of duty by pilots, has been fully realized. To this end some important details of the system are receiving special attention.

The life-saving equipment at the various stations has not been as complete as has been found necessary, but improvements are now being carried out under an officer specially appointed for the duty. His recommendations have been considered, and in many cases acted upon. A number of stations require reorganization and this work is progressing.

The classification of lightkeepers and keepers of fog alarm stations has placed this service upon a better basis with regard to promotions and payments of salaries. The keepers, generally, are satisfied with the new arrangement, and complaints have ceased. The classification, as stated in last year's report has been based upon the importance of the station attended and the rank and salaries of the keepers determined by the class of the station. The improvement in the circumstances of the keepers is already bringing results in regard to a better service.

Reports from agents of the department have been received, containing valuable information concerning the details of lighthouse and buoy service, and reports upon the movements of the Dominion steamers attached to their agencies. Repairs to lighthouses, steamers, buoys, wharves, workshops, plant and equipment have been made and the delivery of building material, supplies to lighthouses and work generally has been carried out in accordance with instructions.

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In the following pages of this report will be found summaries of official reports under descriptive headings, and the appendices consist of reports of officers of different branches in full. Statements of expenditure and revenue, form separate appendices of this report.

The subdivisions of the Marine Branch of the department are as follows:—

The construction of lighthouses and fog alarms by the Engineer's branch.

The maintenance of lights, gas buoys and other buoys by the Commissioner of Lights branch.

The Lighthouse Board, which decides the necessity for aids to navigation.

Dominion steamers:

The ship channel, St. Lawrence river, the Sorel works.

Meteorological and magnetic service.

Investigations into wrecks.

Board of steamboat inspection.

Cattle shipments inspection.

Marine hospitals.

Submarine signals.

Shipping under the Merchants Shipping Act.

Legislation and administration of laws relating to the Department of Marine and Fisheries.

Humane service in connection with seamen.

Wrecking plant subsidized.

Winter communication.

Removal of obstructions to navigation.

Examination of masters and mates and issuing certificates.

Pilotage.

Government of ports and proclaiming of harbours in the Dominion.

Control of harbours and government wharfs.

Dominion steamers, Marine and Fisheries.

Hudson bay and navigation of northern waters.

## LIGHTHOUSE SERVICE.

Lighthouse construction work consisted of erecting concrete towers, wooden towers, skeleton towers, dwellings for lightkeepers, fog alarm buildings, oil sheds, and boathouses. In several cases piers were also built as foundations. Plans were prepared in the Engineer's branch and the following work carried out. In Nova Scotia changes and improvements were made at eight different stations, fog alarm machinery was installed at two stations, one concrete tower and one dwelling house were built. In New Brunswick repairs and improvements were made at eleven light stations, four wooden towers were erected, one pole light, one beacon and one dwelling house. In Prince Edward Island repairs were carried out at three stations and at the Charlotte-town marine wharf.

In Quebec province, one fog alarm station was established, one annex was built for a fog alarm and one important station was enlarged and new machinery installed.



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Repairs were completed at twenty-seven lighthouses. Five concrete towers, five wooden towers, three steel skeleton towers, three pole lights, three dwelling houses and two beacons were erected.

In Ontario, three concrete towers, three wooden towers, one steel skeleton tower, one tripod light and one pole light were erected. Repairs were made at fifteen light-stations in this province.

In British Columbia, two reinforced concrete towers were built, twelve beacons, one pole light, one semaphore and repairs completed at nine light stations and work done on the west coast trails leading to Banfield life saving station.

The total number of lights in connection with lighthouses throughout the Dominion at the end of the fiscal year was 1,291, consisting of the first, second, third, fourth, fifth, sixth and seventh order of lights, pressed bulb lights and catoptric lights. Lightships, lightboats and gas buoys are not included in the number of lights, but form a separate list of aids to navigation.

The complete list of lighthouses, land lights, and lighted buoys has been published in connection with the Engineer's branch.

During the twelve months, between the 1st of April, 1910, and the same month 1911, 'Notice to Mariners' were issued, relating to the establishment of aids to navigation, changes in established aids and improvements to lighthouse buildings, fog alarms, beacons and buoys. These notices contain valuable information and have been sent to various ports where masters of vessels can procure them for their guidance in entering ports and navigating waters in which the improvements have been made. Known obstructions to navigation, caused by wrecks and accidents to vessels, were made subjects of notices. In addition, notices were also issued for the benefit of Canadian mariners, respecting aids in waters contiguous to Canadian waters around the coast of Newfoundland, Labrador and part of the United States. Some important notices were sent out relating to changes and improvements in British and foreign waters, but these notices did not embrace all British and foreign notices received by the department. Selections only of special concern to Canadian seamen were made and included in the Departmental 'Notices to Mariners.' All hydrographic notes which reached the department, however, were embodied in Canadian notices.

The maintenance of lights forms a large item of expenditure for supplies. These supplies were delivered as usual by the superintendent of lights in the different agencies and provinces by Dominion steamers without interruption. Reports of the agents furnish details of the service at each light station. The work has far exceeded the service of former years owing to the yearly extension of the lighthouse system along our coasts, lakes and rivers. This service is becoming so much greater than formerly that the department has found it necessary to consider an addition to the fleet of steamers in British Columbia in particular, while Prince Edward Island work has been somewhat hampered by the removal of the *Stanley* to New Brunswick, where an additional boat was required for attending lights. The *Brant*, employed as a lighthouse tender in Prince Edward Island, is complained of owing to her limited size. A new steamer is under construction for the lighthouse service in British Columbia and another for the St. Lawrence river in the Montreal agency.

## REMOVAL OF OBSTRUCTIONS TO NAVIGATION.

Removal of sunken vessels that formed obstructions to navigation took place, but, in some instances, delay occurred due to causes over which the department had no control. In other cases, wrecks happened and formed obstructions that were not removed because the owners of the vessels, whose business it is to take action, neglected to do so or were unable. These owners were notified, where information of the occurrence of wrecks was received, and requested to have the obstructions removed promptly. The removal of obstructions by the department was done under contract as usual. The detailed account of cost of removal is included in the report of the Chief Engineer, who has control of this work. A summary embraces the removal of the schooner *Ariel* and scow which sank in Owen Sound harbour; cost of removal by contract \$2,100; the steamer *Canada* sunk in Colpy bay, cost \$350 for removal; tug *Lula Rae*, which sank at the mouth of Kaministiquia river, Fort William, Ontario, was removed at a cost by contract of \$600.

## ICE-BREAKING CONTRACTS.

The Canadian Towing and Wrecking Company, Limited, of Port Arthur, which has the contract for ice-breaking in the harbours of Fort William, West Fort William and Port Arthur, kept open these harbours until December 17, 1910, and opened navigation in the spring of 1911 when the Sault Ste. Marie canal was clear for vessels. The contract price is \$30,000 for fall and spring work, and includes conveyance of certain lightkeepers from their stations in Lake Superior. Tiffin and Victoria harbours were kept open for grain vessels from open water in Georgian bay until the close of navigation by the Midland Towing and Wrecking Company, Limited, at a cost of \$5,500. The supervision of this service also forms part of the work of the Chief Engineer's Branch. The detailed report of the Chief Engineer forms Appendix No. 1 of this report. Ice-breaking in the St. Lawrence river is described in the report of the Ship Channel.

## ILLUMINANTS, ILLUMINATING APPARATUS AND GAS BOOYS.

In the report of the Commissioner of Lights and Buoy Service will be found a detailed account of the work done in his branch. The principal work performed was the substitution of modern dioptric apparatus, in a number of major lights, and the improvement of minor coast lights, by the installation of petroleum vapour as an illuminant. Extension and maintenance of the gas buoy and beacon service engaged the attention of the branch. The maintenance of lights and other aids throughout the Dominion, together with the installation of apparatus at new stations, was performed.

The report of the commissioner refers to the satisfactory season of 1910, in which no interruptions of importance occurred; only two losses of buoys happened, viz.: gas buoy, type No. 11, serial No. 575, was driven from its moorings and carried ashore near Centreville, N.S., and was totally lost, also a gas buoy, type No. 9½, serial No. 711, was lost from Kyuquot, B.C., and has not been recovered. One No. 11 gas buoy reported last year as having broken adrift from Southwest Head, Cape Sable, N.S.,



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was recovered and repaired. A small type gas buoy sunk in 1906, in Georgian bay, was located by the C. G. S. *Simcoe* and recovered.

The lighting apparatus now in use in the Dominion lighthouse service, in which are operated distinctive lights, are known as quick-flashing lights, occulting lights, fixed lights (red and white), anchor lenses for pole lights, and a few Wingham 30-day lights. The reflectors or catoptric apparatus is used for revolving and fixed lights. The illuminants used consist of petroleum oil, oil vapour and acetylene (compressed and automatically generated in the buoys and beacons) and pintsch gas.

In the Quebec district and St. Lawrence river, pintsch gas was formerly used in the gas buoys but acetylene has been substituted throughout these districts with the exception of the illuminant used at Beaujeu bank pier light. Pintsch gas is generated by the pintsch gas apparatus from crude petroleum, at Quebec and conveyed to the pier.

Buoys are charged with calcium carbide, by officers detailed for that work at the different agencies, who perform the work under a strict code of regulations and the Dominion steamers are employed for placing and removing these buoys. The St. Lawrence river gas buoys above Montreal, and on the Great Lakes, are attended by the crews of the steamers *Scout* and *Simcoe*, supervised by expert officers. Part of the work of repairing the lighting apparatus is done at the several agencies in the maritime provinces, British Columbia, Quebec and Montreal and for the Great Lakes, Georgian bay and Upper St. Lawrence river at Prescott and Depot Harbour. The illuminants for use in the different agencies for lighthouses, gas buoys and beacons were delivered under the supervision of the Superintendents of Lights and Buoy Service as usual and no interruptions of importance have been reported.

The equipment for testing lighthouse apparatus and gas buoys at the Dominion depot, Prescott, has been usefully employed in making comparisons between one order and another. These tests have been made with a view of determining the suitability of lanterns and lighting apparatus, for the different stations, where it was decided to install new apparatus or improve the old. Combinations of machinery, one order with another have been worked out with satisfactory results. Illuminants have also been tested before extensive purchases were made and experiments made with oil, oil vapour and acetylene.

The submarine warning stations have been in full operation during the season of navigation and, as stated in the commissioner's report, with entire satisfaction to shipping. Four submarine bells attached to gas buoys with improved adjusting and durable attachments, have also given satisfaction and this type of warning may be safely recommended for more general use.

The report of the Commissioner of Lights and Buoys contains several enclosures, furnishing details of work performed during the fiscal year and a tabular statement of all light stations, lights, fog alarms, lighted buoys and beacons and the number of lightkeepers throughout the Dominion. The report of the Commissioner of Lights forms Appendix No. 2 of this report.

## ST. LAWRENCE RIVER SHIP CHANNEL.

The ship channel of the St. Lawrence river between Montreal and Father Point, has a length of 340 statute miles.

The contracted part of the river which may properly be called the 'ship channel' commences at the Traverse, to which point from Montreal the distance is 220 miles. The length of the channel that actually required improvement by dredging is 70 miles, of which 64.05 miles to a depth of 30 feet at the lowest stage of the water in the river was completed at the close of navigation in 1910, leaving 5.95 miles yet remaining to be dredged.

From Montreal to Batiscan the tide does not affect the channel for navigation and therefore, to enable vessels to load to full depth, the dredging of this part of the river was first undertaken and is now completed.

The channel has a minimum width in the straight portion of 450 feet and at the curves of from 500 to 800 feet. Very deep draught vessels wait for the tide to pass Cap à la Roche and St. Augustin bar.

The work remaining to be done is about  $1\frac{1}{2}$  miles of shale rock at Cap à la Roche about three-quarters of a mile at Grondines; about 1 mile at St. Augustine bar, also about 1 mile of widening at Ste. Croix. Cap à la Roche will probably take from two to three years to complete, while the remainder to Quebec should be completed one year later.

The project of work below Quebec had in view a 30-foot channel at low tide at St. Thomas flats and at Beaujeu bank everywhere 1,000 feet wide.

The Beaujeu bank channel was completed in depth in 1909 and widened in 1910. The St. Thomas channel, where the material is clay and sand, is expected to be finished in 1911.

The Cap Levrard channel, formerly 300 feet wide and only  $27\frac{1}{2}$  feet deep, was made wider and deeper. This channel is now 450 feet wide and 30 feet deep at low water according to the datum established in 1897.

The 30-foot channel is now completed to the upper end of Cap à la Roche channel, a distance of  $107\frac{1}{2}$  miles from Montreal. Some progress was made during the past season in deepening the channel to 35 feet. About 3 miles of this work was done in Lake St. Peter. Owing to the greater difficulty in dredging at the increased depth more powerful machinery will be employed, and this machinery is now under construction.

The 35-foot project has been fully considered, and in the season of 1909 the first work of deepening the ship channel to that depth was begun. The main efforts, however, have been confined to the completion of the 30-foot channel in order to give vessels a depth of 30 feet in the whole channel without depending upon the tides to assist deep draught vessels to pass Cap à la Roche and St. Augustin bar.

The present plan is quite ample for the 30-foot channel, but the strain on the dredges in the greater depth has been so clearly demonstrated that it has been decided to add equipment of more substantial and effective character to the plant now in use. When the additional machinery is completed, no doubt is entertained about rapid progress being made in the 35-foot channel. When the deepening is accom-



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plished the largest vessels afloat, drawing full cargo depth, will be able to reach Montreal at the lowest stage of water that is liable to exist at any season of the year.

In connection with new plant introduced in 1910 is a rock cutter, imported from Scotland and made by Lobnitz and Company of Renfrew. This rock cutter was experimented with by utilizing part of the hull and machinery of the stone-lifter formerly in use. The results were most satisfactory, showing that after the rock-cutter ram had gone over the ground the dredge could remove about 75% more material than without the aid of the ram. The operations were started at Cap Charles in the Cap à la Roche section of the channel. Upon the results obtained, it was decided to order a 22-ton rock-cutter ram of greater length for high tides in the 35-foot channel from Lobnitz and Company. The 20-ton one used in Cap à la Roche channel, where the shale rock is very hard, broke this rock without difficulty, taking an average of five blows to penetrate three feet, the penetrations being five feet apart. The value of the rock-cutter is attested by the fact that the strain on the dredges is very much less, time is saved and fewer repairs are necessary.

Two semaphores, indicating the depth of the water in their respective localities, were maintained, one at St. Jean Deschaillons for the depth in the dredged Cap à la Roche channel was put in operation on May 2, and the other at St. Nicholas showing the depth over the undredged bar at St. Augustin on May 24, 1910.

The superintendent of the ship channel records, in his report, the trip of inspection which you in your capacity as Minister of Marine and Fisheries made of the channel, accompanied by officials, representatives of the Shipping Federation of Canada, Montreal Board of Trade, La Chambre de Commerce, Montreal and Quebec harbour commissioners and representatives of the Montreal and Quebec pilots.

Another very interesting part of the work to shipowners was the commencement of dredging to the site of the proposed floating dock to be constructed in Montreal harbour. The dock basin, to be undertaken by the Montreal harbour commissioners, is some little distance from the main channel; on this account the Department of Marine and Fisheries agreed, in the interest of navigation, to dredge the approach to the floating dock, and good progress is reported, leading to the opinion that the approach to a depth of 30 feet low water of 1897 datum, and a minimum width of 750 feet, will be completed by the end of the season of 1911.

The expenditure for dredging work in the channel for the fiscal year 1910-11 amounted to \$576,838.02, or 10<sup>2</sup>/<sub>100</sub> cents per cubic yard. Total number of cubic yards dredged during the year was 5,600,050, and for maintaining, supplying new plant, shops and surveys \$138,247.81 was expended. The total expenditure for accomplishing the whole work up to March 31, 1911 was \$8,358,332.23; for dredging and for plant and repairs and sweeping the channel, \$3,756,770.41; total, \$12,115,102.64. These sums embrace the items of disbursements strictly confined to deepening and widening and sweeping the ship channel, but do not include incidental expenses charged to the Ship Channel account since the work was transferred from the Public Works department. Some of the repairs were done while the dredges were at their working localities, but all extensive repairs and overhauling were carried out at the Sorel shipyard.

One of the large items of expenditure for construction, was incurred in connection with the building of a large steel dredge at Sorel, by the department and extended

over a period included in three fiscal years. The dredge was completed and put at work in August, 1910, in the new channel being dredged to the floating dock basin, Montreal harbour. It is claimed that this dredge is one of the most powerful, if not the most powerful, known to the department, in the world.

The report of the superintendent includes several comprehensive tabular statements showing the details of the work performed, disbursements, &c., during the past year and a statement containing the cost of the ship channel since its inception. Included in the report is also a statement detailing the number and kind of dredges, tugs, scows, stone lifters, stone cutter ram and sweeping apparatus.

Sweeping of the channel was carefully performed, but no obstructions of consequence were found. The favourable natural conditions found in the bed of the St. Lawrence river, through which cuttings have been made, as well as in the deep water sections where no cuttings were necessary, have been described in former reports. The practise of sweeping is continued each year as a precaution against the filling in by silt of the cuttings, or the chance displacement of boulders that might be carried into the channel by the ice or other means. The Great Lakes act as basins that retain any sediment or debris conveyed into their waters by running streams, and no streams, emptying into the river itself, contain material of this kind to any considerable extent, therefore, no redredging has been found necessary, and no fear is entertained of any serious filling up anywhere in the channel. These facts, however, would not justify the department in overlooking all necessary precautions, and therefore, the practice of sweeping and examining the channel is kept up each season.

The report of the superintendent of the ship channel also contains a very interesting report by officer McLean, on icebreaking from Quebec to Montreal, during the winter. Mr. McLean describes the work of the *Montcalm* and *Lady Grey*, both icebreaking steamers. The work consisted of cutting channels in the narrower parts of the river, where it had become rafted or accumulated, and by detaching bodies of ice in other parts, allowing it to be carried down stream. The beneficial results are summed up by stating that flooding in the spring was prevented at certain low lying lands along shore; dredging operations were begun earlier and navigation from lower ports in the St. Lawrence river to Quebec, Three Rivers, Sorel and Montreal, was made possible sooner than if the ice had been allowed to escape in a natural way.

Twelve signal stations, with masts and cross spars, have been serviceable in connection with furnishing information to passing vessels, respecting weather conditions at any point along the river and by telephone communication with either Quebec or Montreal. This service has been valuable when orders for articles required in repairing dredges and scows have been sent to Sorel.

The ship channel has been carefully buoyed with gas and other buoys throughout the season of navigation and the lighthouses along the shore of the river have at all times been kept in a state of efficiency. This service, however, comes under the Dominion lighthouse and buoy service.

The report of the Superintendent of the ship channel forms an appendix to this report.



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## SOREL SHIPYARD.

The ship channel fleet is overhauled and repaired at this shipyard during the winter months and when, during the working season of the fleet any extensive repairs are required, the dredge, tug or scow requiring repairs is sent to the yard. The whole ship channel fleet, with the exception of two or three cases was put into winter quarters at Sorel in the fall of 1909 and numbered 65 vessels. Ten other crafts belonging to this department and the Public Works department were also in winter quarters at Sorel.

These vessels were repaired and made ready for the spring and summer work. It was found necessary to haul out on the slips a number of the vessels to examine the hulls and caulk the bottoms of tugs and barges. The nature of the repairs to each steamer, dredge, tug, barge and scow is described in the report of the superintendent of the shipyard.

The construction work included almost every kind of work necessary for the requirements of the department, and embraced the completion of a supply steamer, a powerful dredge, one elevator dredge, a dipper dredge, two tugs, two self-bailing life-saving motor boats, two dumping scows, a sounding scow, a steel sounding scow, a steel coal barge and installing a rock breaker for the ship channel work on a scow intended as a stonelifter.

The buildings and shops, where necessary, were repaired and painted, the narrow gauge railway was maintained in good working order; the water works system, compressed air distribution, electric power lines and telephone lines were also properly maintained. The ship hauling ways and wharves were repaired; the former needed extensive work and the deep water pier was lengthened. New machinery of a minor nature was installed and an air compressor with a 35 h.p. dynamo was placed in the boiler shop, and four transformers were installed in the power house to supply current for the new motors of the punching machines.

The expenditure at the Sorel shipyard for the fiscal year amounted to \$1,174,749.55. This expenditure included the cost of repairs to the ship channel plant and construction for that service, of dredges, tugs and scows.

The report of the Superintendent of the Sorel shipyard forms an appendix to this report.

## DOMINION STEAMERS.

The Dominion steamers received their usual annual overhaul and necessary repairs were made to fit them for the special work in which they are engaged. The inspector of machinery T. R. Ferguson, and inspector of hulls of Dominion steamers, F. McConkey, reported their work of inspection of the steamers employed in the maritime provinces and Quebec. In British Columbia inspection is done by the steamboat inspector of that province when overhauling and special repairs are made.

Owing to navigation being continued throughout the year to Halifax and several ports on the eastern and southeastern coasts of Nova Scotia, and the Bay of Fundy, the steamers *Lady Laurier* and *Aberdeen*, in the Nova Scotia agency, and the *Stanley* and *Lansdowne* in the New Brunswick agency, were kept in commission

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all the year except when repairs were being made. The steamers *Quadra* and *Newington*, in British Columbia, were also engaged throughout the year in the lighthouse and buoy service.

The Quebec steamers were placed in winter quarters at Quebec, excepting the *Montcalm* and *Champlain*. The *Montcalm* made trips to the gulf in December and January, and during the remainder of the winter was engaged in icebreaking between Quebec and Montreal. The upper St. Lawrence and lake steamers of the department were placed in winter quarters. The dimensions of the various steamers, tonnage and other particulars are here given for convenient reference, while the movements are furnished for the purpose of showing the localities and service in which they were employed, and when they began and ended the season's work.

Sixteen of these vessels wintered at Quebec, and repairs were made by men employed in the department's workshops at that place. Several of the smaller vessels employed in the lighthouse and buoy service in the Montreal agency were placed in winter quarters at the Sorel shipyards and repairs made to them at the shipyard. The whole ship channel fleet also wintered at Sorel, where overhaul and repairs were done.

*'Lady Laurier.'*

This steamer is a twin screw vessel 214.9 feet long, 34.2 feet wide, 17.2 feet deep; 413 net, 1,051 gross tonnage and 186 nominal horse-power. She was built in Paisley, Scotland, in 1902, and is employed in the lighthouse and buoy service in the Nova Scotia agency of the department.

On April 1, 1910, the *Lady Laurier* was employed in placing buoys in Halifax harbour and continued one week in this service. On the 5th of the same month, the vessel sailed to Sable island to deliver supplies. She returned to Halifax on the 8th, and was continued in lighthouse and buoy service until July 27. From July 28 until August 12 this steamer was engaged in the submarine cable work at Yarmouth. She resumed the buoy service in those waters until August 20, when she returned to Halifax and had her hoisting gear repaired, and on the 24th resumed the buoy service. She again began the submarine operations at Yarmouth on the 29th, and on September 2 sailed to St. John, N.B., in connection with placing two large gas buoys. Her work on submarine cable laying was resumed at Lunenburg on September 10. She continued in that service until the 20th of that month, when she returned to Halifax. From that place she again engaged in lighthouse and buoy service generally, until October 19, when she sailed for Sable island with supplies. At Sable island 31 ponies, 9 barrels of cranberries and a number of passengers and luggage were taken on board, and the vessel proceeded to North Sydney, where the ponies were landed, and after taking bunker coal the steamer was engaged in the buoy service and continued in this service until January 27, 1911. The vessel was hauled to No. 1 pier, Halifax, and repairs made to boilers. On February 16 the *Lady Laurier* was again put in the lighthouse and buoy service until March 2, and then proceeded to Halifax and moored at the dockyard.

Some extensive repairs to the machinery were made in June, 1910, when the vessel was hauled out on the slip at Halifax; additional repairs were made in October and a general overhaul and repairs done in January, 1911.



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## 'Aberdeen.'

The *Aberdeen* is a single screw steel vessel, built in Paisley, Scotland, in 1894. She is 180 feet long, 31.1 feet wide, 16.9 feet deep; 266 net, 674 gross tonnage, and 200 nominal horse-power. She is employed in the Nova Scotia lighthouse and buoy service. Her work includes placing and raising heavy coast buoys in the Prince Edward Island agency.

This steamer was undergoing repairs from March 21, 1910, until April 18. On April 19 she was placed in commission conveying coast buoys and moorings to the eastern shore of Nova Scotia, she continued working on the coast of Nova Scotia on her way to Charlottetown, and arrived at that port on May 1. The vessel completed the placing and charging of gas buoys in Prince Edward Island, and resumed her work on the Nova Scotia coast on May 12. The *Aberdeen* was employed in conveying building material to several lighthouses and also engaged in buoy service in Nova Scotia. On May 31 she left Halifax for Cape Freels and Cape Race, Newfoundland, with lighthouse material, calling at Sable island on the way.

This vessel was employed in lighthouse and buoy service on the Nova Scotia coast, Bay of Fundy and Prince Edward Island coast until March 16, 1911, when extensive repairs were begun at the Halifax dockyard. Minor repairs had been made throughout the year at the dockyard.

## QUEBEC DISTRICT.

## 'Montcalm.'

The *Montcalm* is a powerful ice-breaker, specially designed for the St. Lawrence river service. She was built at Yoker, G.B., in 1904, and is a twin screw steel vessel, 245 feet long, 40.6 feet wide and 15.7 feet deep; 526 net, 1,432 gross tonnage; 406 nominal and 4250 indicated horse-power at a steam pressure of 220 pounds.

She is commanded by Captain Pelletier, carries a crew of about sixty men and is employed during the summer season delivering lighthouse supplies, landing workmen and construction materials at lighthouses and fog alarms in the Gulf of St. Lawrence and Strait of Belle Isle.

In the winter the *Montcalm* is employed in icebreaking in the St. Lawrence river, maintaining communication with Seven Islands and Anticosti, in which services she has been very successful during the past fiscal year.

She towed the White Island lightship and Lower Traverse buoy to their respective positions on the 9th of April, was ordered to go in dock for repairs on the 29th. Defective rivets were replaced, her bottom caulked, rudder coupling bolts and horse shoe plates repaired and her bottom well coated with composition.

She left the dock on June 1, made preparation for the summer service, started on July 8 with lighthouse supplies for Belle Isle Newfoundland coast, Bird Rocks, Brion island, Magdalen islands and returned to Quebec on August 6.

She sailed on September 9, for Anticosti, Baie des Chaleurs and Gaspé coast with lighthouse supplies, and on October 16 made another cruise to the north shore, west coast of Newfoundland, Bird Rocks, Gaspé and Anticosti returning to Quebec on the 31st, after which she was laid up for necessary repairs.

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Resuming operations she rendered assistance to the Canadian Government steamer *Druid* in removing buoys from their stations, and on February 5 left for Seven Islands and Anticosti returning to Quebec on the 12th of the same month.

The success of this trip is especially interesting, as it shows the possibility of continuous winter communication between Quebec and those islands which have hitherto been isolated for five months each winter.

The *Montcalm* then resumed operations in the ice above Quebec. She was successfully operating there at the end of the fiscal year.

She consumed 4,983 tons of coal and sailed 14,525 miles during the fiscal year.

*'Montmagny.'*

The *Montmagny* is a screw steel, steam vessel, built in the government shipyard, Sorel, P.Q., in 1909. She is 212.6 feet long, 34.8 wide, 19.5 feet deep; 1,269 gross, 723 net tonnage and 148 nominal horse-power.

She was placed at the disposal of the Quebec agency for construction purposes on July 3, 1910.

She was employed exclusively in transporting workmen and materials to stations in the River St. Lawrence, Strait of Belle Isle, Baie des Chaleurs and other stations until December 9, when she sailed to Halifax, N.S., removing on her way thither, the wireless operators at Fame Point, Heath Point and Harrington, whom she landed at Sydney, and arrived at Halifax on December 9.

Landing two lifeboats and two compressors for the agency, she sailed on the 21st in search of Blond Rock gas buoy which had gone adrift. After three days the buoy was sighted and towed to Halifax.

She continued in the buoy service of the Halifax agency, until March 24, when she was hauled on the slip at Dartmouth for repairs.

Her bottom was scraped and painted, a new 'strongback' inserted, hatches, closets and canvas gear repaired and the ship was ready for sea on March 31.

*'Druid.'*

The *Druid* is a single screw steel vessel, built in Paisley, Scotland, in 1902. She is 160 feet long, 30.1 feet wide, 12.5 feet deep; 149 net, 503 gross tonnage and 59 nominal horsepower.

The *Druid* is in command of Captain Michel Gagnon, carries a crew of thirty-one men and is employed in the buoy service from Platon to Father Point, a distance of 185 miles. She has been constantly employed placing and keeping gas and other buoys in position, maintaining beacons and day marks. She towed the *Princess Shoal*, *Red Islet*, *White Island Reef* and *Lower Traverse* lightships to their respective stations in the spring, keeping them in position and supplies during the season of navigation and towed them to Quebec after the close of navigation.

In addition to this she carries workmen to repair lighthouses and supplies required for their maintenance and operation.

She sailed a total distance of 13,910 miles and consumed 2,239 tons of coal during the fiscal year.



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## 'Rouville'

The *Rouville* is a screw wooden vessel, built in Sorel, P.Q., in 1906. She is 125 feet long, 26 feet wide, 14.2 feet deep; 301 gross, 144 net tonnage and 54 horsepower. She is commanded by Captain Aristide Belanger, carries a crew of twenty men and is employed in the lighthouse construction service of this department.

About the middle of April she was docked for repairs; left dock on May 9, sailed on June 7 to Anticosti island with construction workmen and materials, and on the 22nd to several stations in the Strait of Belle Isle with a gang of construction workmen.

The *Rouville* was sent to Rivière Quelle on October 19, to replace the C.G.S. *Champlain* on the ferry service during the time the latter was being repaired; remained on that ferry until November 12, when she sailed for Anticosti island with construction and lighthouse supplies. She was sent to replace the lower Traverse lightship on December 2, after which she sailed for Louise basin for winter quarters.

## 'Champlain.'

The *Champlain* is a screw steel vessel, built in Paisley, Scotland, in 1904. She is 120 feet long, 30.3 feet wide and 17.6 feet deep; 225 net, 552 gross tonnage and 81 nominal horse-power.

This ice-breaker is under the command of Captain Rene Pelletier, and is employed the year round in the ferry service between Rivière Ouelle wharf on the south shore and Murray bay, St. Irénée and Cap à l'Aigle, on the north shore of St. Lawrence river.

From June 20, to September 17, she made two round trips daily and a total of 388 trips during the year. She failed to cross once in December, seven times in January, fourteen times in February, once in March—twenty-three times in all. Those failures were due to the unusually severe winter causing large quantities of heavy ice to fill the ferry route, which is eleven miles wide.

The *Champlain* has a crew of 26 men, transported 8,295 passengers, 4,758 bags of mail matter, a large quantity of freight; 1,214 meals were served to passengers and the vessel earned \$6,853.20.

The *Champlain* was laid up for repairs at Quebec on May 20; was replaced by the *La Canadienne*, and returned to her route on June 20. She was again laid up on September 20, for a general overhauling in preparation for the winter service; was replaced by the *Rouville* and returned to her route on November 11.

## 'Eureka.'

The *Eureka* is a single screw steel vessel, 94.7 feet long, 22 feet wide, 11.9 feet deep; 170 gross, 91 net tonnage and 40 nominal horsepower.

She was built in Glasgow, Scotland, in 1893, for the Department of Public Works, but is now in the pilotage service of this department. She carries a crew of nineteen men; was in command of Captain F. X. Pouliot up to May 10, when Captain Jean Baptiste Bélanger was placed in command. She left as usual early in the

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spring for Father Point; was employed during the season in embarking and disembarking pilots, for which service she is well adapted, and returned to Quebec on November 30, for necessary repairs.

From September 13, she was under the control of Captain L. A. Demers, superintendent of pilotage, but is now under the supervision of the Quebec agency while in winter quarters.

*'La Canadienne.'*

The *La Canadienne* is a single screw iron steamer, built in Glasgow, Scotland, in 1880. She is 154.3 feet long, 22.7 feet wide, 10.9 deep; 227 net, 372 gross tonnage and 60 horsepower.

This vessel was in the Hydrographic Survey service until the Canadian Government Steamer *Cartier* arrived, when the *La Canadienne's* officers, crew and equipment were transferred to the *Cartier*, and she was sent to replace the *Champlain* on May 10, and remained on that service until June 20, when she was turned over to the Sorel shipyard.

*'Arctic.'*

The *Arctic* is a single screw wooden vessel built in Kiel, Germany, in 1901, and bought by the Department of Marine and Fisheries in 1904. She is 161.4 feet long, 37.2 wide, 20.2 deep; 518 net, 762 gross tonnage and 44 nominal horsepower.

She is under the command of Captain J. E. Bernier, carries a crew of thirty-nine men and is chiefly employed in patrolling the waters of the Arctic regions.

The vessel was repaired, outfitted and provisioned by the Quebec agency and sailed for northern waters on July 7, 1910.

NEW BRUNSWICK AGENCY.

*'Stanley.'*

The *Stanley* is a single screw steel vessel, built in Govan, G.B., in 1888, specially for winter navigation in the Strait of Northumberland. She is 207.8 feet long, 32.0 feet wide, 17.9 feet deep; 394 net, 914 gross tonnage and 300 nominal horse-power.

At the beginning of the fiscal year the *Stanley* was laid up at St. John, N.B., undergoing cleaning, minor repairs and inspection, and left on the 4th on the light-house and buoy service until June 8, when she arrived in Halifax harbour. She remained at Halifax and Dartmouth until July 2, undergoing a thorough cleaning, scraping and painting. The boilers and machinery were overhauled and repaired; some changes were made in her fresh-water service and the electric light system improved. On July 7, the ship, being coaled, provisioned and otherwise fitted for an extended cruise, sailed from North Sydney on July 7 on a hydrographic survey trip to Fort Churchill and Port Nelson under the direction of Captain J. B. Miles, whose report will be found in the annual report of the Deputy Minister of the Naval Service.

She left Churchill on July 27 for Nelson Roads.

On August 8, the Canadian Government steamer *Earl Grey* arrived at Churchill and on August 4, the *Stanley* returned to Sydney. She sailed for Halifax on the 17th, and on the 29th sailed for Sable island; continued in the buoy and lighthouse service;



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arrived at Lahave, February 9, having barques *Langen* and *Carrie Windslow* in tow; left *Langen* in shallow water; towed *Carrie Windslow* to clear water.

She left on February 14, for Magdalen islands, with 39 bags of mail, got stuck in heavy ice on the 15th. She worked her way to open water on the 17th, and freed the steamer *Bruce* from ice. She was again fast in ice off St. Paul's island on February 24, and remained in that vicinity in heavy ice until March 1. She reached St. John, N.B., on March 6.

While on a trip to Shag harbour, she lost her propeller and was towed to Sand Point by the Canadian Government steamer *Montmagny* and from thence to Halifax, where she remained until the end of the fiscal year.

*'Lansdowne.'*

The *Lansdowne* is a wooden steamer built at Maccan, N.S., in 1884. She is 188.6 feet long, 32.1 feet wide, 15.8 feet deep; 463 net, 680 gross tonnage and 80 nominal horsepower.

She is employed in the lighthouse and buoy service of the New Brunswick agency of this department. She was continually employed in this service during the year, except when laid up for repairs at St. John, from the 4th, to October 23.

## BRITISH COLUMBIA DISTRICT.

*'Quadra.'*

The *Quadra* is a screw, steel vessel built in Paisley, Scotland, in 1891. She is 147.5 feet long, 31.1 feet wide, 13.6 feet deep; 265 net, 573 gross tonnage and 120 horsepower.

The *Quadra* at the beginning of the fiscal year, was employed landing construction materials for Triangle island lighthouse, recharging gas beacons and buoys in waters between Victoria and Port Simpson and continued in those waters until April 18, when she was laid up for repairs. Her decks were put in good order, new donkey boiler installed, cylinders rebored, pistons renewed, and she resumed the buoy service on June 16, from that date until June 25.

She then sailed to Queen Charlotte islands, having on board the chief engineer of the department, who made surveys of sites for new lighthouses. She landed supplies of oil to northern lighthouses, returned on July 29, overhauled and repaired Amphitrite whistling buoy; was laid up for repairs to machinery from the 1st to October 19.

From October 19, to November 1, she was landing construction materials for Nootka lighthouse, and from November 6, to December 19, was landing supplies for wireless stations and establishing new acetylene lights, recharging acetylene beacons and buoys and moving keepers from Green island lighthouse from December 29, to February 20, 1911; and for the balance of the year was establishing new aids to navigation from Victoria to Prince Rupert and lighting gas buoys.

*'Newington.'*

The *Newington* is a screw, iron vessel built in Hull, Great Britain, in 1889, and purchased by the department in 1908. She is 115.3 feet long, 21 feet wide, 11.5 deep; 61 net, 93 tonnage and 58 horsepower.

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She is employed in the lighthouse and buoy service of British Columbia agency of this department.

*'Leebro.'*

The *Leebro* is a steam, screw vessel, built in Victoria, British Columbia, in 1908, and is 123.5 feet long, 28.8 feet wide, 11.1 feet deep; 323 gross, 198 net tonnage and 22 nominal horse-power.

She was chartered from the Leeming Bros., Limited, for construction, lighthouse and buoy services, at the rate of \$135 per day, the company paying for all running expenses.

From the 1st, to April 22, she was on construction work under the direction of the district engineer.

From that date to June 2, was in the buoy and lighthouse supply service between Victoria, and Prince Rupert, was supplying lighthouses till October 12, when she carried men and apparatus to the new lighthouse under construction on Triangle island.

On February 11, her services were dispensed with, but she was again employed on construction work from March 1, to 11, 1911.

PRINCE EDWARD ISLAND DISTRICT.

*'Earl Grey.'*

The *Earl Grey* was built in 1909 at Barrow-in-Furness, Great Britain, by Vickers Sons and Maxim. This vessel is a twin screw steel steamer, 250.0 feet long, 47.7 feet wide and 24.1 feet deep. Her tonnage is 2,357 gross and 930 net, with a displacement of 3,340 tons. She is fitted with two double ended and two single ended boilers, each allowed a pressure of 180 pounds to the square inch, triple expansion engine of 800 nominal or 6,500 indicated horse-power, water ballast space of 101.11 tons, divided into nine water ballast tanks of latest type, holding in all 739½ tons weight of water. The water ballast is used in ice operations to lighten or increase the weight forward or aft.

The vessel was designed for icebreaking and winter service in carrying passengers and freight between Prince Edward Island and the mainland. A description of the *Earl Grey* was given in the Forty-Third Annual Report submitted to parliament in 1910.

On April 1, 1910, the *Earl Grey* made trips from Charlottetown to Pictou, and returned to Charlottetown, making last trip of the season.

Left Charlottetown on the 5th, for Halifax, to go on slip.

Left Halifax for Pictou on June 20.

On July 7, received orders to proceed to Quebec from Pictou.

On July 11, sailed from Pictou for Quebec and returned to Pictou on July 20.

On August 3, left Pictou for Hudson bay. August 22, at Churchill. Returning, arrived at Bay of Islands, Newfoundland, September 5. Arrived at Sydney, C.B., on September 10, to coal. On September 12, sailed from Sydney for Charlottetown and dropped anchor in harbour at 3 p.m.

On September 15, left Pictou to lay up.



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Returned to Charlottetown December 11, to make ready for the winter service.

The *Earl Grey* started on the Charlottetown-Pictou route December 7, 1910, and ran on that route until January 14. On Georgetown-Pictou route until January 20. On Charlottetown-Pictou route for two days—January 20 and 21. On Georgetown-Pictou route on January 23, and 24. On Charlottetown-Pictou route on January 25, and 26. On the Georgetown-Pictou route from January 27, until March 31, 1911, the end of the fiscal year.

From January 27 to February 4, made regular trips. On February 4, broke *Minto* free and took her mails and passengers and baggage on board. On Sunday the 5th made a special trip. Made regular trips on the 6th and 7th. On the 8th, was detained at Georgetown by snow. Made regular trips from the 9th to the 14th. On the 14th, broke the *Minto* free and took her mails and passengers to Pictou, but did not arrive there until 11.25 p.m. on account of heavy weather. On the 15th detained at Pictou, loading coal and freight. Started trip on the 16th, but had to return to Pictou on account of heavy ice, arriving at Pictou at 12.20 p.m. On the 17th, had a hard trip, taking ten hours to make the run. Made regular trip on the 18th. Started special trip on Sunday the 19th, but did not make Georgetown until 8.15 a.m. on the 20th. On the 21st, started out, but had to return to Georgetown, as ice was too heavy. From the 22nd to the 28th, made regular trips. On the 28th, was detained at Pictou all day by snow storms. Made regular trips from March 1 to 6. Started trip on the 6th, but was stuck out in heavy ice all night, making port on the 7th, at 11.20 a.m. Started trip on the 8th, but stuck, not making port until 1.20 p.m. on the 10th. From the 11th to the 21st, made regular trips. On the 21st, tried for Charlottetown, but got stuck outside of Charlottetown harbour by thick ice. Had passengers and mails taken to Charlotteown by teams. Left position at 7 a.m. on the 22nd, and arrived at Pictou at 11.30 a.m. the same day. Made regular trips from March 23 until the end of the fiscal year, March 31, on the Georgetown-Pictou route.

She made 44 round trips, carried 118,532 packages of freight, weighing 5,791 tons.

Her earnings were:—

|                               |             |
|-------------------------------|-------------|
| Receipts from freight.. . . . | \$ 8,497 38 |
| “ “ passengers.. . . .        | 3,571 75    |
| “ “ berths, 977.. . . .       | 977 00      |
| “ “ meals, 1,404.. . . .      | 140 40      |
| Total earnings.. . . .        | \$13,186 53 |

‘*Minto*.’

The *Minto* is a single screw vessel specially designed for ice-breaking, carrying passengers and freight. She was built in Dundee, Scotland, in 1899, and is 225 feet long, 32.7 feet wide, 18.0 feet deep, 372 net, 1,090 gross tonnage and 216 nominal horse-power, 2,900 indicated.

On April 1, 1910, the *Minto* made trip from Pictou to Charlottetown, and returned to Pictou, April 2, making last trip of the season. Left Pictou on April 2

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for the Magdalen islands. Left on return on April 4 with passengers and mail, and arrived at Charlottetown on the same day at 8.30 p.m.

Left Charlottetown on the 5th April at 8.30 a.m., to break the ice barrier in Summerside harbour. Arrived back at Charlottetown at 3 p.m.

On April 6, at the wharf at Charlottetown.

On April 21, *Minto* went to Pictou.

Left Pictou on the 26th April for Gaspé.

On May 6th, *Minto* in Harrington harbour.

Returned to Charlottetown, May 24th.

On May 30th, started on Steam Navigation Company's Service, and continued in this service until June 4th.

Sailed for Halifax on June 7th at 6.30 p.m., for alterations to deck houses, &c. Returned to Charlottetown, June 16th.

On July 4th, the *Minto* received orders to lay up at marine wharf for repairs. Repairs finished September 13th. Sailed for Pictou, September 15th, thence to Halifax, arriving there September 19th. Went on trip to the Bay of Fundy to supply lighthouses. Returned to Halifax, October 14 and laid up for repairs.

The *Minto* left Halifax, December 13 for Charlottetown to make ready for the winter service. Left for Summerside, December 16th and arrived there on the 17th, crossed to Cape Tormentine on the same day. Made two trips between Summerside and Tormentine, but was ordered to Charlottetown, as there were no facilities for handling freight at Tormentine.

The *Minto* arrived at Charlottetown, December 19 and ran on the Charlottetown-Pictou route until January 3rd, when she went on the Georgetown-Pictou route, on which she ran regularly until February 3. Was stuck in the ice from February 4th to the 9th. Then made regular trips to the 13th. Stuck from the 14th to 18th. Sunday the 19th, could not move from Pictou until the 24th, when she left but got caught in the ice and did not make Georgetown until the 27th. Was stuck out in the ice February 28 to March 1, and reached Pictou, March 2. Detained at Pictou on March 3rd. Made Georgetown on the 4th. Stuck in the ice from the 7th to the 10th and made Pictou on the 11th. Made trip on the 13th and 14th. Stuck in the ice on the 15th. Made Georgetown on the 16th, where she remained until the 18th, when she went to Pictou. Made regular trips on the Georgetown-Pictou route until March 31st, 1911, the end of the fiscal year.

She made three round trips, carried 77,196 packages of freight weighing 1,994 tons.

Her earnings were:—

|                               |                  |
|-------------------------------|------------------|
| Receipts from freight.. . . . | \$2,575 82       |
| “ passengers.. . . .          | 1,809 25         |
| “ meals, 714.. . . .          | 71 40            |
| “ berths.. . . .              | 423 00           |
| Total earnings.. . . .        | <hr/> \$4,879 47 |



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*'Brant'*

The *Brant* is a wooden vessel, built in Charlottetown, P.E.I., in 1899. She is 100.4 feet long, 19.1 feet wide, 8.5 feet deep; 58 net and 142 gross tonnage and 33 nominal horsepower.

The crew joined the *Brant* on April 11, she began the placing of Charlottetown harbour buoys on the 14th, the outside buoys on the 16th; took Magdalen island buoy to Pictou on the 17th. She was constantly employed in the lighthouse and buoy service, with the exception of rendering service to fishery inspector Matheson from the 3rd to the 15th of September, and being in dry dock at Pictou for repairs from October 3rd to November 4th.

The earnings of the *Brant* consist of

|  |          |
|--|----------|
| Placing and lighting Charlottetown buoys.. . . . . | \$ 80 00 |
| Towage.. . . . .                                   | 200 00   |
| Lifting Charlottetown buoys.. . . . .              | 40 00    |
| <hr/>  |          |
| Total earnings.. . . . .                           | \$320 00 |

## THE GREAT LAKES AND GEORGIAN BAY DISTRICT.

*'Simcoe'*

The *Simcoe* is a steel, twin screw vessel of 217 nominal horse power. She was built by Swan, Hunter and Wingham, Richardson, Limited, Wallsend-on-Tyne, England and launched in 1909. She is 180 feet long, 30.2 feet wide, 15.2 deep, 193.8 net, 437.63 gross tonnage.

She is employed in the lighthouse and buoy service on the Great Lakes and Georgian bay.

## UPPER ST. LAWRENCE RIVER AND GREAT LAKES.

*'Scout.'*

The *Scout* is a wooden, single screw steamer built in Cardinal, Ontario, in 1900. She is 103.6 feet long, 25.6 feet wide, 9.2 feet deep; 70 net and 176 gross tonnage and has 27 nominal horsepower.

She is fitted with powerful search and electric lights and was used in the buoy service between Montreal and Kingston during the fiscal year.

*'Reserve.'*

The *Reserve* is a screw, wooden steamer, built in Buffalo, N.Y., in 1884. She is 61.8 feet long, 15.3 wide, 4.8 feet deep; 36 net, 49 gross tonnage and 30 horsepower. She is engaged in sweeping the channel, towing and attending the buoys under the control of the lighthouse depot, Prescott.

*'Lambton.'*

The *Lambton* is a single screw steel vessel of eight-nine horse-power; her hull was built in the government shipyards, Sorel, P.Q., in 1908-9. She is 108 feet long, 25.1 feet wide, 12.7 feet deep; 323 gross and 182 net tonnage.

Her engines are triple expansion, inverted, direct acting, with working pressure of 170 pounds to the square inch, and built by Fleming & Ferguson, Limited, Paisley, Scotland.

She is in the lighthouse, construction and superintendence services of this department.

MONTREAL DISTRICT.

*'Maisonneuve.'*

The *Maisonneuve* is a wooden screw steamer, built at Smith's Falls, Ontario, in 1894, and was first called the *Gladys*. She is 75.7 feet long, 9.7 feet wide and 1.3 feet deep; 18 net, 26 gross tonnage, and 9 horsepower.

This steamer is employed in lighthouse work delivering supplies, construction material and maintaining the buoy service on the lower Ottawa river, Rideau river and lakes and the Richelieu river. Her work was begun on April 30 from Sorel, where the vessel had wintered and was put in condition to perform her general service. Buoy service formerly performed under contracts was taken up by this steamer and all buoys were in position by May 25. Besides regular inspection work, materials were conveyed to several localities for construction of lighthouses, beacons and tripods. The lightships on Lake St. Louis were also put in position. All buoys were raised by November 29 and the vessel went into winter quarters at Sorel. The lightships were taken in by the *Hosanna*, which replaced the *Maisonneuve* for that work on December 2.

*'Hosanna.'*

The *Hosanna* is a single screw vessel, built at Sorel, P.Q., in 1893. She is 58.6 feet long, 23 feet wide, 6 feet deep; 59 net, 89 gross tonnage and nineteen horsepower. She is in the lighthouse and buoy service on the St. Lawrence river. The vessel was principally employed in conveying construction material during the season of navigation of 1910 and wintered at Sorel, where she was overhauled and partly rebuilt and made ready for the spring work of 1911.

*'Shamrock.'*

The *Shamrock* is a single screw wooden vessel, built in Quebec in 1898. She has been altered and improved, to suit the service in which she is engaged, several times. Her length is 117.3 feet, width 25 feet, depth 9.7 feet; her net tonnage is 161, gross 237 and her horsepower 61 nominal.

The *Shamrock* is employed in the buoy and lighthouse service on the St. Lawrence river between Montreal and Platon. Her work was begun on April 3, 1910, and continued until December 4. The vessel consumed 890 tons of coal and her trips covered 12,004½ miles of run. The *Shamrock* was put in winter quarters at Sorel, repaired and made ready for the spring work of 1911.

*'Alpha.'*

The *Alpha* is a single screw wooden vessel, built at Lévis, P.Q., in 1890. She is 47.5 feet long 12.2 feet wide, 4.9 feet deep; 7 net and 20 gross tonnage. She was employed in the construction branch of the lighthouse and buoy service in the St.



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Lawrence river during 1910 and wintered at Sorel, where she was repaired for spring work for 1911.

*'Vercheres.'*

The *Vercheres* is a tug and was employed in the Montreal district in conveying construction material during 1910 and wintered at Sorel.

## THE FISHERIES PROTECTION.

*'Princess.'*

The *Princess* is a steel, single screw vessel, built in Grangemouth, G.B., in 1896. She is 165 feet long, 26 feet wide, 17.7 feet deep; 252 net, 542 gross tonnage and 90 nominal horsepower.

She is engaged in the fisheries protection service in the gulf and River St. Lawrence.

*'Curlew.'*

The *Curlew* is a steel screw steamer, 116.3 feet long, 19.8 feet wide, 11.3 feet deep; 96 net, 158 gross tonnage and 50 horsepower.

She is engaged in the fisheries protection service in New Brunswick agency.

*'Petrel.'*

The *Petrel* is a steel, screw vessel, built at Owen Sound, Ont., in 1892. She is 116 feet long, 22 feet wide, 10.3 feet deep; 98 net, 192 gross tonnage and 50 nominal horsepower.

She is engaged in the fisheries protection service in the waters of the maritime provinces.

*'Canada.'*

The *Canada* is a steel, screw steamer, built in Barrow-in-Furness in 1904. She is 206 feet long, 25.1 feet wide, 13.3 feet deep; 136 net, 411 gross tonnage and 209 horsepower.

She is employed in the fisheries protection service in the waters of the maritime provinces.

*'Kestrel.'*

The *Kestrel* is a screw, wooden vessel, built at Vancouver, B.C., in 1903, by the Wallace Shipbuilding Company. She is 126 feet long, 24 feet wide, 12.2 feet deep, 188 net, 311 gross tonnage and 59 nominal horsepower.

She is engaged in the fisheries protection service of British Columbia waters.

*'Falcon.'*

The *Falcon* is a screw, wooden steamer built at Port Moody, B.C., in 1902 and was formerly called the *Ruth*. She is 70.7 feet long, 17.8 feet wide, 7.4 feet deep, 48 net, 71 gross tonnage and 14 nominal horsepower.

She is in the fisheries protection service of British Columbia.

*'Georgia.'*

The *Georgia* is a wooden, screw vessel, built at Victoria, B.C., in 1900. She is 60 feet long, 11.3 feet wide, 5 feet deep, 23 net, 34 gross tonnage and 12 nominal horsepower.

She is in the fisheries protection of British Columbia waters.

*'Lady of the Lake.'*

The *Lady of the Lake* is a single screw wooden vessel, built in Selkirk, Manitoba, in 1907. She is 105 feet long, 18.5 wide, 8.9 feet deep, 155 net, 201 gross tonnage and 13 nominal horsepower.

She is employed in the fisheries service on Lake Winnipeg

*'Alcedo.'*

The *Alcedo* is a single screw vessel, built at Ballard, Washington, U.S.A., in 1905. She is 69.7 feet long, 16.8 feet wide, 7.6 feet deep; 47 net, 70 gross tonnage and 16 nominal horsepower. She is employed in the fisheries protection on the Pacific coast.

*'Restless.'*

The *Restless* is a single screw wooden vessel, built at New Westminster, B.C., in 1906. She is 71 feet long, 17 feet wide, 7 feet deep; 53 net, 76 gross tonnage and 16 nominal horsepower.

She is engaged in the fisheries protection service on the Pacific coast.

*'Hudson.'*

The *Hudson* is a single screw wooden vessel, built at St. John, N.B., in 1903. She is 57.7 feet long, 12.5 feet wide, 4.7 feet deep; 23 net, 34 gross tonnage and 7 nominal horsepower.

She is employed in the fisheries service in New Brunswick waters.

*'Ostrea.'*

The *Ostrea* is a single screw wooden vessel, built in Charlottetown, P.E.I., in 1902. She is 50 feet long, 13 feet wide, 4.5 feet deep, and is employed in the oyster culture service in Prince Edward Island waters.

*'Nelson.'*

The *Nelson* is a wooden steamer, 64 feet long, 13.8 feet wide and 6.6 feet deep; 19.46 gross tonnage and 8.16 nominal horsepower.

*'Thirty-three.'*

*Thirty-three* is a steel boat, 80 feet long, 18.1 feet beam, 8.3 feet deep; 79 gross, 33 net tonnage and 160 indicated horsepower. She is employed in the fisheries service in Nova Scotia.

## SESSIONAL PAPER No. 21

## REPORT OF ICE BOATS AT CAPE TRAVERSE, P.E.I., AND CAPE TORMENTINE, N.B.

This service opened February 15th and closed March 25th. Twenty-nine trips were made from Cape Tormentine and thirty from Cape Traverse.

Passengers carried, 65.

Earnings. . . . . \$ 152 00

Cost of service. . . . . 7,132 58

During the year seven ice boats were repaired at Cape Traverse at a cost of \$168. Two ice boats were sent to Canadian Government steamer *Stanley*. Six boats remain at Cape Tormentine. Thirteen boats remain at Cape Traverse.

## BUOYS AND BEACONS.

Buoys as a general thing cause more anxiety than other aids to navigation owing to the probability of displacement by gales and collision of vessels. During the past year no serious accidents have happened to the buoys causing removal during the season of navigation. It must be mentioned, however, that two losses occurred with regard to gas buoys. Serial No. 575 was driven ashore near Centreville, N.S., and proved a total loss, also gas buoy type No. 9½, serial No. 711, was lost from its position at Kyuquot, B.C., and has not been recovered. One No. 11 gas buoy, which broke adrift from Southwest Head, Cape Sable, the previous year, was recovered and repaired; also a small type gas buoy which was lost in Georgian bay in 1906 was recovered by the government steamer *Simcoe*.

The inspection of buoys in the different provinces was carried on as usual. The coast buoys, consisting of automatic whistling, combined gas and whistling buoys, combined gas and bell buoys and gas buoys, whistling buoys, bell buoys and steel can and conical buoys were placed, maintained and removed by government steamers. Lengthy reports of this work have been received from the agents of the department, who report the satisfactory carrying out of this service.

The large number of spar buoys maintained in harbours and channels under contract was still further increased by additions made to mark dangers hitherto unmarked. The most important work in connection with the buoy service was the substitution of gas buoys for many unlighted buoys, and, in many cases, of a higher class of buoy. Navigation has been improved on the coasts of Nova Scotia, New Brunswick, Prince Edward Island, British Columbia, Quebec and the Great Lakes by placing gas buoys in locations where buoys had not formerly been placed. Notices to mariners were issued giving information to shipping.

The St. Lawrence river buoy service was carried out with care, and several changes were made which improved navigation. There are now in the Montreal district 68 gas buoys, 33 iron and 163 spar buoys, all numbered for position and painted red or black, according to port or starboard side of the channel coming up stream; the red on the starboard side and black on the port side.

In the Nova Scotia district there are 30 gas buoys, 17 whistling buoys and 41 bell buoys, besides a number of can and conical buoys, all known as coast buoys.

In the New Brunswick district there are 23 gas buoys, 4 whistling buoys and 7 bell buoys, coast buoys.



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In the Prince Edward Island district 6 gas buoys, 2 whistling buoys and 1 bell buoy, with several can and conical buoys, comprise the coast buoys.

In the Quebec district the coast buoys number 37 gas buoys, 1 whistling buoy, 1 bell buoy and a number of can and conical buoys.

In the British Columbia district the number of gas buoys has been increased to 18; there are 2 whistling and 2 bell buoys also in this district, all of which are classed as coast buoys.

In Ontario there are 78 gas buoys, 1 whistling and 3 bell buoys. In this province, on the Great Lakes and upper St. Lawrence river, a large number of gas buoys have been placed owing to the great amount of inland shipping. Of the 78 gas buoys above mentioned 16 were placed in the lower Detroit river as part of the extension of the new aids to navigation in that river now under the control of the department; 20 unlighted spar buoys were also added to improvements in this water way.

In addition to coast and harbour buoys, the day and lighted beacons have been attended to by the department's steamers. In British Columbia there are now 35 acetylene beacons and a number of day beacons. The unwatched beacons, on the coast of British Columbia, were found necessary as the coast extends for so many miles north from Victoria and Vancouver that the placing of buoys in position would involve the maintaining of an undue number of steamers for that purpose alone. The beacons are visited periodically and charged with calcium carbide. In the near future the beacons in the northern parts of the province will be attended from the depot now under construction at Prince Rupert.

The report of the Commissioner of Lights and Buoys, which forms an appendix to this report, contains an enclosure (No. 3) of all gas buoys in operation throughout the Dominion during the fiscal year 1910-11. Other information relating to buoy and beacon service will be found in the same report, and a tabular statement of all aids to navigation that were in operation during the year.

The coast buoys have, during the year, been regularly inspected by officers of the Dominion steamers and superintendents of lights, at the various agencies. The acetylene buoys have been regularly charged with carbide and repairs have been made at the agencies when the buoys have been raised.

Harbour buoys have, as usual, been under inspection of harbour masters whose duty it is to see that the contractors place and maintain the buoys in a proper manner before payment is made. The following list of harbour, river and channel buoys indicates the number, approximately, kept in position during the year.

The total expenditure for buoy service in the different provinces amounted to \$136,180.70, and by provinces as follows:—

|                              |              |
|------------------------------|--------------|
| Nova Scotia.. . . .          | \$ 13,363 96 |
| Prince Edward Island.. . . . | 3,679 85     |
| New Brunswick.. . . .        | 24,944 54    |
| Quebec.. . . .               | 12,658 10    |
| Montreal district.. . . .    | 47,382 62    |
| Above Montreal.. . . .       | 14,245 73    |
| British Columbia.. . . .     | 19,905 90    |

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\$136,180 70

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LIST of Buoys maintained by the Department of Marine and Fisheries in Canadian Waters in 1910.

## ONTARIO DISTRICT.

|   | No. of<br>Buoys. |  | No. of<br>Buoys. |
|---|------------------|--|------------------|
| Amherstburg, including Bois Blanc...            | 38               | Orillia, 11 bushes...                  | 7                |
| Bay of Quinté (two contracts and Govt. Str.)... | 19               | Parry Sound, Govt. Str.                | 32               |
| Bears Rump...                                   | 1                | Pembroke...                            | 23               |
| Big Duck island, bell buoy...                   | 1                | Pointe au Baril, beacons 15...         | 4                |
| Blind river...                                  | 4                | Penetanguishene...                     | 10               |
| Byng inlet...                                   | 7                | Port Arthur...                         | 12               |
| Campbell rock...                                | 1                | Port Rowan...                          | 10               |
| Collingwood...                                  | 15               | River Thames...                        | 8                |
| Clapperton channel, 1 beacon and...             | 9                | Rondeau...                             | 6                |
| Georgian bay...                                 | 13               | Sault Ste. Marie...                    | 21               |
| Green shoal, Govt. Str.                         | 1                | Sault Ste. Marie, canal approaches...  | 25               |
| Goderich...                                     | 4                | Sault Ste. Marie, gas buoys...         | 5                |
| Hawkesbury, Govt. Str.                          | 16               | Seine river and Grassey lake, piles... | 30               |
| Kaministiquia...                                | 9                | Seine river...                         | 10               |
| Lake Erie and Detroit river...                  | 67               | South Bay-Mouth...                     | 4                |
| Lake of the Woods, including bell buoy.         | 183              | Stokes bay...                          | 6                |
| Lake Simcoe...                                  | 5                | Sturgeon bar, gas buoy...              | 1                |
| Lake Superior, including bell buoy...           | 8                | Saugeen, river...                      | 9                |
| Little Current...                               | 10               | Sturgeon river...                      | 26               |
| Lone Rock, gas and bell buoy...                 | 1                | St. Clair river, gas buoy...           | 1                |
| Lake Timiskaming...                             | 3                | Sarnia, gas buoy, 1...                 | 3                |
| Midland...                                      | 6                | Southampton, gas buoy...               | 1                |
| Murray Canal and Presqu'île bay...              | 23               | Timagami lake, 4 beacons and...        | 31               |
| Napanee...                                      | 14               | Trenton, Govt. Str.                    | 13               |
| Niagara, bell buoy...                           | 1                | Victoria island, Lake Superior...      | 3                |
| North Sisters rock...                           | 4                | Waubashene...                          | 37               |
|   |                  | Winnipeg river...                      | 13               |

## QUEBEC AND MONTREAL DISTRICT.

|                                    |     |   |     |
|------------------------------------|-----|---|-----|
| Amherst harbour...                 | 8   | Lachine rapids...                       | 7   |
| Anse à Gascons...                  | 1   | Magdalen islands...                     | 5   |
| Anse à Beaufils...                 | 1   | Maria...                                | 1   |
| Barachois de Malbaie...            | 1   | Matane...                               | 2   |
| Bonaventure...                     | 9   | Mont Louis...                           | 1   |
| Cap Chat...                        | 1   | New Richmond...                         | 3   |
| Cape Cove...                       | 1   | North channel, Island of Orleans...     | 13  |
| Cap Meule...                       | 1   | Nouvelle...                             | 2   |
| Carleton Point...                  | 1   | Paspebiac...                            | 1   |
| Chicoutimi...                      | 21  | Pentecost...                            | 1   |
| Cock Point...                      | 1   | Percé...                                | 2   |
| Chaudière basin...                 | 7   | Pearl Reef, Mag. Islands, bell buoy...  | 1   |
| Cape Despair...                    | 1   | Port Daniel...                          | 1   |
| Douthes point...                   | 1   | Portneuf...                             | 9   |
| English Bay...                     | 3   | Restigouche river...                    | 10  |
| Eschourie rock...                  | 1   | Restigouche river, gas buoys...         | 6   |
| Fox river...                       | 1   | Richelieu river, balises...             | 37  |
| Gaspé...                           | 6   | Petit Rocher...                         | 2   |
| Grand Entry...                     | 17  | Richelieu river, St. Antoine to Chambly | 35  |
| Griffin Cove...                    | 1   | Richelieu river, above St. Johns...     | 21  |
| Gros Cap-aux-Os...                 | 1   | Rigaud river...                         | 7   |
| House harbour, Magdalen islands... | 7   | Rivière à la Pipe, Lake St. John...     | 8   |
| Lake Timiskaming, viz:—            |     | Rivière des Prairies...                 | 10  |
| Opemigon narrows...                | 4   | Ste. Adélaïde de Pabos...               | 1   |
| Montreal river...                  | 3   | Ste. Anne river...                      | 1   |
| North Timiskaming, bushes and...   | 9   | St. Michel...                           | 4   |
| Couvrettes camp...                 | 1   | St. Thomas...                           | 8   |
| Browns point...                    | 1   | St. Godfroy...                          | 1   |
| Ville Marie channel, bushes...     |     | St. Lawrence river, between Platon and  |     |
| Lake St. John—                     |     | Montreal, gas buoys...                  | 68  |
| River Ashampmuchuan...             |     | St. Lawrence river, between Platon and  |     |
| River Mistassini...                |     | Montreal, unlighted buoys...            | 196 |
| River Peribonka...                 |     | Serpent reef...                         |     |
| Roberval harbour...                |     | St. Placide, in charge of Govt. Str...  | 52  |
| including beacons...               | 118 | Timiskaming North...                    | 9   |
| Lake St. Louis...                  | 20  | Timiskaming...                          | 13  |
| Little river east...               | 1   | Ville Marie...                          | 1   |
| Little river west...               | 1   |   |     |

LIST of Buoys maintained by the Department of Marine and Fisheries, &c.—*Con.*QUEBEC AND MONTREAL DISTRICT—*Con.*

|   | No. of<br>Buoys. |  | No. of<br>Buoys. |
|---|------------------|--|------------------|
| Maintained by Quebec agency, gas buoys including combined.. . . .   | 37               | Maintained by Quebec agency below Quebec bell buoy.. . . .       | 1                |
| Maintained by Quebec agency, unlighted buoys, can and conical.. . . | 44               | Maintained by Quebec agency below Quebec, whistling buoy.. . . . | 1                |

## NEW BRUNSWICK DISTRICT.

|  |     |  |    |
|--|-----|--|----|
| Bathurst.. . . .                       | 26  | Miscou.. . . .                           | 9  |
| Baie Verte and Port Elgin.. . . .      | 36  | Musquash.. . . .                         | 7  |
| Bay du Vin.. . . .                     | 13  | Neguac.. . . .                           | 21 |
| Beaver and Blacks harbour.. . . .      | 9   | Neil harbour.. . . .                     | 1  |
| Black Brook, Miramichi river.. . . .   | 3   | Northeast arm, 24 stakes and.. . .       | 8  |
| Black Land gully.. . . .               | 12  | Northwest arm, Miramichi.. . . .         | 10 |
| Buctouche, 34 stakes and.. . . .       | 22  | Northwest arm, 24 stakes and.. . .       | 8  |
| Buctouche river, bushes and buoys..    | 260 | Ox island, St. John river.. . . .        | 5  |
| Bartibogue, 12 bushes.. . . .          | 1   | Petit Rocher.. . . .                     | 2  |
| Campobello.. . . .                     | 10  | Pisarinco.. . . .                        | 2  |
| Caraget.. . . .                        | 21  | Pokemouche, number of bushes and..       | 7  |
| Cocagne, stakes, 30 and.. . . .        | 11  | Quaco (maintained by C. G. S.).. . .     | 3  |
| Dalhousie and Restigouche.. . . .      | 11  | Richibucto and Albion.. . . .            | 33 |
| Digdequash.. . . .                     | 5   | Richibucto, Rexton and Browns yard.      | 30 |
| Dipper harbour.. . . .                 | 3   | Salmon river.. . . .                     | 15 |
| Dorchester.. . . .                     | 3   | Shediac.. . . .                          | 18 |
| Grande Anse.. . . .                    | 4   | Shediac, North of island, 20 bushes and  | 2  |
| Grand Lake.. . . .                     | 32  | Shippigan, 17 pickets, 14 bushes and..   | 20 |
| Grand Manan, 1 spindle and.. . . .     | 28  | St. Andrews.. . . .                      | 14 |
| Great Shemogue.. . . .                 | 7   | Ste. Croix ledge, maintained by C.G.S.   | 11 |
| Hatfield point, bushes.. . . .         |     | St. John river.. . . .                   | 77 |
| Harvey.. . . .                         | 7   | St. Louis, 35 bushes.. . . .             | 8  |
| Hopewell cape.. . . .                  | 1   | St. Simon, bay Caraget.. . . .           | 4  |
| Kouchibouguac and Black river, bushes  |     | Tabusintac.. . . .                       | 20 |
| Little Aldouane, 25 bushes and.. . .   | 5   | Tracadie, South Gully, 30 bushes and..   | 5  |
| Lepreau.. . . .                        | 3   | Tracadie, 100 bushes, North Gully.. .    | 11 |
| Lette and Back bay, 1 spindle and..    | 14  | Tynemouth creek.. . . .                  | 3  |
| Little Shemogue, 1 beacon and.. . .    | 5   | Washdemoak, 144 bushes and.. . .         | 2  |
| Little Shippigan.. . . .               | 12  | Waweig river.. . . .                     | 2  |
| Magaguadavic.. . . .                   | 13  | West Isles, 4 spindles and.. . . .       | 23 |
| Maquapit and French lakes, 20 stakes   |     | Whistling 4, gas 23, bell 7, and can and |    |
| and.. . . .                            | 4   | conical buoys are maintained by C.       |    |
| Miramichi, 9 winter buoys, 1 lightship |     | G. steamers.                             |    |
| and.. . . .                            | 24  |  |    |

## PRINCE EDWARD ISLAND DISTRICT.

|                                    |    |  |    |
|------------------------------------|----|--|----|
| Bay Fortune.. . . .                | 3  | Miminegash.. . . .                     | 6  |
| Beach point.. . . .                | 3  | Montague.. . . .                       | 10 |
| Bedeque.. . . .                    | 11 | Murray harbour.. . . .                 | 42 |
| Belle river.. . . .                | 1  | New London, 14 stakes and.. . . .      | 9  |
| Brae harbour.. . . .               | 5  | Orwell and Vernon river, 36 bushes..   | 6  |
| Bruenell river.. . . .             | 4  | Pinette, number of bushes and.. . .    | 5  |
| Cardigan, Lower, 7 summer and 2    |    | Port Hill.. . . .                      | 12 |
| winter buoys.. . . .               | 7  | Pownal.. . . .                         | 7  |
| Cardigan, Upper.. . . .            | 20 | Rollo bay.. . . .                      | 3  |
| Casumpec, 12 stakes.. . . .        | 14 | Rustico.. . . .                        | 5  |
| Charlottetown, 20 stakes.. . . .   | 21 | Savage harbour.. . . .                 | 4  |
| Covehead.. . . .                   | 3  | Souris.. . . .                         | 5  |
| Crapaud, stakes and.. . . .        | 6  | St. Peters harbour.. . . .             | 10 |
| East river (Hillsboro').. . . .    | 17 | Summerside.. . . .                     | 10 |
| Egmont bay, North, 16 stakes.. . . | 6  | Tignish.. . . .                        | 4  |
| Egmont south, 8 stakes and.. . . . | 2  | Tracadie.. . . .                       | 7  |
| Georgetown.. . . .                 | 14 | West point.. . . .                     | 1  |
| Goose harbour.. . . .              | 2  | Wood island.. . . .                    | 1  |
| Grand river, 1 beacon and.. . . .  | 12 | Maintained by agency, bell buoys.. .   | 1  |
| Grand river, lot 14.. . . .        | 8  | Maintained by agency, conical and can. | 8  |
| Indian rocks.. . . .               | 1  | Maintained by agency, gas.. . . .      | 6  |
| Little channel.. . . .             | 3  | Whistling.. . . .                      | 2  |
| Malpeque.. . . .                   | 16 | Zephir rock (N.B. waters) gas only..   | 1  |



## SESSIONAL PAPER No. 21

List of Buoys maintained by the Department of Marine and Fisheries, &c.—*Con.*

## NOVA SCOTIA DISTRICT.

|  | No. of<br>Buoys. |   | No. of<br>Buoys. |
|--|------------------|---|------------------|
| Advocate harbour.. . . .                                     | 6                | Meteghan river.. . . .  | 2                |
| Apple river.. . . .  | 8                | Northport.. . . .   | 11               |
| Arichat.. . . .  | 20               | North Sydney.. . . .  | 5                |
| Argyle river and sound.. . . .                               | 9                | Neils harbour.. . . .   | 1                |
| Avon river.. . . .   | 6                | Parrsboro.. . . .   | 6                |
| Amherst basin.. . . .  | 4                | Petit de gras, 6 winter buoys and.. . . .                       | 14               |
| Barrington.. . . .   | 36               | Pictou.. . . .  | 6                |
| Bear river.. . . .   | 17               | Pope Harbour.. . . .  | 1                |
| Beaver harbour, 8 winter buoys and.. . . .                   | 8                | Port Félix.. . . .  | 11               |
| Blandford.. . . .  | 5                | Port Hood.. . . .   | 7                |
| Bridgewater.. . . .  | 10               | Port Le Tour.. . . .  | 15               |
| Brulé.. . . .  | 5                | Port Medway, Govt. Str.. . . .                                  | 9                |
| Canning or Habitant river.. . . .                            | 6                | Port Phillip.. . . .  | 12               |
| Canso and St. Andrew passage, 28<br>winter buoys and.. . . . | 31               | Port Morien.. . . .   | 2                |
| Cape Negro or Northeast harbour.. . . .                      | 17               | Port Hébert.. . . .   | 12               |
| Cariboo.. . . .  | 6                | Pubnico.. . . .   | 21               |
| Chester.. . . .  | 25               | Pugwash.. . . .   | 9                |
| Cheticamp.. . . .  | 13               | Prospect Lower.. . . .  | 10               |
| Chezzeetcook and Petpiswick.. . . .                          | 6                | Port Mouton.. . . .   | 9                |
| Christmas island and Barra strait.. . . .                    | 11               | Port Bickerton, 3 winter buoys and.. . . .                      | 5                |
| Clarks cove, West bay.. . . .                                | 3                | Pennant harbour.. . . .   | 9                |
| Clarks harbour.. . . .                                       | 17               | Pringles harbour.. . . .  | 4                |
| Cockerwit pass and Woods harbour.. . . .                     | 20               | River John, stakes.. . . .                                      | 3                |
| Cooks cove, Toby cove.. . . .                                | 4                | Roseway.. . . .   | 3                |
| Calf Island bay.. . . .                                      | 5                | St. Anns.. . . .  | 5                |
| Crooked channel.. . . .                                      | 5                | St. Mary river, winter buoys and.. . . .                        | 9                |
| Crow harbour.. . . .   | 3                | St. Mary river, up to Sherbrooke, 5<br>winter buoys and.. . . . | 18               |
| D'Escouse and Lennox passage.. . . .                         | 27               | St. Peters bay, 4 winter buoys and.. . . .                      | 16               |
| Digby and Annapolis, 5 winter buoys.. . . .                  | 15               | St. Peters inlet.. . . .  | 10               |
| Dover.. . . .  | 4                | Sambro.. . . .  | 12               |
| East Dover.. . . .   | 3                | Shag harbour.. . . .  | 15               |
| East Bay, Bras d'Or.. . . .                                  | 8                | Sheet harbour, 5 winter buoys and.. . . .                       | 9                |
| Eskasoni.. . . .   | 4                | Shelburne.. . . .   | 25               |
| Fourchu harbour.. . . .                                      | 11               | Ship harbour, 5 winter buoys and.. . . .                        | 11               |
| French Village, St. Margarets bay.. . . .                    | 5                | Ship rock.. . . .   | 1                |
| Great Bras d'Or.. . . .                                      | 8                | Shulee.. . . .  | 8                |
| Gillis point, Boulacet.. . . .                               | 1                | Smiths island.. . . .   | 2                |
| Guysborough.. . . .  | 3                | Sydney.. . . .  | 2                |
| Glace bay.. . . .  | 4                | Shad bay.. . . .  | 4                |
| Hay cove.. . . .   | 14               | Sober island to Ecum Secum.. . . .                              | 21               |
| Harbour au Bouche, 6 stakes.. . . .                          | 4                | Spry bay.. . . .  | 6                |
| Ingonish, South bay.. . . .                                  | 7                | Stoney island.. . . .   | 6                |
| Isaacs harbour, 9 winter buoys and.. . . .                   | 12               | Tangier, 7 winter buoys and.. . . .                             | 4                |
| Indian harbour.. . . .                                       | 4                | Tatamagouche, 46 stakes and.. . . .                             | 18               |
| Indian Point, Bar Channel.. . . .                            | 3                | Terrence bay.. . . .  | 3                |
| Jeddore, 5 winter buoys and.. . . .                          | 11               | Tor bay, 8 winter buoys.. . . .                                 | 19               |
| Jegogan.. . . .  | 7                | Three fathom harbour.. . . .                                    | 5                |
| Judique.. . . .  | 1                | Tidnish, stakes and.. . . .                                     | 5                |
| Ketch harbour.. . . .  | 6                | Tusket (two contracts), 3 spindles.. . . .                      | 30               |
| L'Ardoise.. . . .  | 5                | Tancook island.. . . .  | 3                |
| Lahave.. . . .   | 10               | Upper Prospect.. . . .  | 4                |
| Little Narrows.. . . .                                       | 10               | Wallace.. . . .   | 15               |
| Little Dover.. . . .   | 9                | Walton harbour.. . . .  | 1                |
| Little Bras d'Or.. . . .                                     | 2                | West bay.. . . .  | 5                |
| Liverpool.. . . .  | 3                | West Dublin and Crooked channel.. . . .                         | 13               |
| Lockeport.. . . .  | 6                | Westport.. . . .  | 3                |
| Lunenburg.. . . .  | 8                | Weymouth.. . . .  | 13               |
| Lunenburg, back cove.. . . .                                 | 9                | Whitehead, 5 winter buoys and.. . . .                           | 9                |
| Lunenburg, middle south.. . . .                              | 16               | West Chezzetcook.. . . .  | 7                |
| Louisburg.. . . .  | 7                | Yarmouth, 38 bushes and.. . . .                                 | 12               |
| Liscombe, 4 winter buoys and.. . . .                         | 6                | Maintained by agency—   |                  |
| Mabou.. . . .  | 19               | Whistling buoys.. . . .   | 15               |
| Mahone bay and Chester, Govt. Str.. . . .                    | 12               | Bell buoys.. . . .  | 42               |
| Main-à-Dieu.. . . .  | 6                | Steel conical and can buoys.. . . .                             | 192              |
| Margaree harbour, 2 stakes.. . . .                           | 9                | Gas buoys.. . . .   | 6                |
| Merigomish.. . . .   | 6                | Combined gas and bell buoys.. . . .                             | 6                |
| Marie Joseph, 10 winter buoys and.. . . .                    | 13               | Combined gas and whistling.. . . .                              | 27               |
| Monsellier, 4 stakes and.. . . .                             | 6                | Light vessels.. . . .   | 2                |
| McKinnon harbour.. . . .                                     | 6                | Submarine bell signal stations.. . . .                          | 3                |
| Musquodoboit.. . . .   | 7                | Submarine bells attached to gas buoys.. . . .                   | 2                |
| Martins brook.. . . .  | 6                | Spar buoys, about.. . . .                                       | 1,000            |

## LISTE of Unlighted Buoys in the Waters of British Columbia.

| Name of Buoy.               | Position.                            | Description.                               |
|-----------------------------|--------------------------------------|--|
| Hesquot..                   | Fairway harbour ent                  | Steel, whistle, white and black, vertical. |
| Half-tide rock.....         | Hecate passage, Clayoquot sound..... | Platform, ball, red.                       |
| North bank.....             | "                                    | " drum, black.                             |
| Vargas rock.....            | "                                    | " ball, red.                               |
| Mearns spit.....            | Deception channel                    | " black.                                   |
| Stubs spit.....             | Stubbs spit,                         | "  |
| Browning passage            | West end of pass                     | Spar, red and black bands.                 |
| "                           | North shore bank                     | " black.                                   |
| "                           | Middle bank                          | " red.                                     |
| Hankin rock.....            | Mosquito harbour                     | Platform, red and black.                   |
| Round island (north).....   | Round island bank                    | Spar, black.                               |
| Round island (south).....   | Templar channel                      | " red.                                     |
| Templar channel.....        | Village island                       | Steel, can, drum, black.                   |
| Amphitrite point.....       | Carolina channel, Barclay scund..... | Whistle, steel, red.                       |
| Sutton rock.....            | Ucluelet harbour                     | Platform, red and black.                   |
| Rosedale rock.....          | Race rocks, Juan de Fuca st.....     | Steel, can, black.                         |
| Whale rock.....             | Esquimalt harbour                    | Spar, red and black.                       |
| Patterson rock.....         | "                                    | Platform, black,                           |
| Canteen.....                | "                                    | " red.                                     |
| Channel rock.....           | Victoria harbour.....                | " ball, black.                             |
| Songhees rock.....          | "                                    | Spar, black.                               |
| Hospital rock.....          | "                                    | Platform, ball, black.                     |
| Shoal point.....            | "                                    | Spar, red.                                 |
| Victoria inner harbour..... | "                                    | " red and black.                           |
| Johnstone reef.....         | Haro strait.....                     | Steel, can, black.                         |
| Darcy shoal.....            | "                                    | "  |
| Sidney spit (e).....        | Sidney channel.....                  | "  |
| Sidney spit (w).....        | "                                    | " conical, red.                            |
| Sidney wharf (s).....       | Shoal off Sidney wharf.....          | Spar, red.                                 |
| Sidney wharf (n).....       | "                                    | "  |
| Sidney rock.....            | Rock off Sidney wharf.....           | Platform, red.                             |
| Eastern buoy.....           | Pender canal.....                    | Steel, conical, red.                       |
| Western buoy.....           | "                                    | " black.                                   |
| Colbourne passage (s).....  | Colbourne passage.....               | Platform, drum, black.                     |
| " (n).....                  | "                                    | " ball, red.                               |
| Celia reef.....             | Shute passage.....                   | Steel, conical, red.                       |
| Entrance point.....         | Satellite channel.....               | "  |
| Batt rock.....              | Ganges harbour.....                  | " can, black.                              |
| Benmohr rock.....           | Trincomali channel.....              | Platform, ball, black.                     |
| Governor rock.....          | "                                    | "  |
| Victoria rock.....          | "                                    | Steel, can, red and black.                 |
| Virago rock.....            | Porlier pass.....                    | Spar, black.                               |
| Porlier pass fairway.....   | "                                    | Bell, steel, black and white.              |
| Grappler reef.....          | Houston passage.....                 | Steel, can, black.                         |
| Indian reef.....            | Stuart channel.....                  | "  |
| False reef.....             | "                                    | " can, red and black.                      |
| White rock.....             | Trincomali channel.....              | " conical, red.                            |
| South east.....             | False narrows.....                   | Spar, red.                                 |
| East.....                   | "                                    | " black.                                   |
| Middle.....                 | "                                    | " red.                                     |
| West.....                   | "                                    | " black.                                   |
| Rosenfelt reef.....         | Strait of Georgia.....               | Steel, can, cage, black.                   |
| Gossip reef.....            | Active pass.....                     | Bell, steel, black.                        |
| Canoe pass.....             | Robert bank.....                     | Steel, can, black.                         |
| Sand heads.....             | Channel across Sandheads.....        | 5 steel, conical, black.                   |
| First Narrows.....          | South side of Narrows.....           | 8 " conical, red.                          |
| Burnaby shoal.....          | Vancouver harbour.....               | Spar, red.                                 |
| Second narrows.....         | "                                    | "  |
| Reef point.....             | Strait of Georgia.....               | Steel, can, cage, black.                   |
| Welcome point.....          | Welcome pass.....                    | Spar, red.                                 |
| Tattenham ledge.....        | "                                    | "  |
| Snake island reef.....      | Strait of Georgia.....               | Spar, black.                               |
| Horswell reef.....          | "                                    | Steel, conical, red.                       |
| Clark rock.....             | Inner channel.....                   | "  |
| Entrance.....               | Nanaimo harbour.....                 | Steel, can, black.                         |
| Oyster harbour.....         | Stuart channel.....                  | Platform, black, triangle.                 |
| Sawmill point.....          | Ladysmith.....                       | Platform, black.                           |
|                             |                                      | " ball, black.                             |

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LIST of Unlighted Buoys in the Waters of British Columbia—*Con.*

| Name of Buoy.                 | Position.                              | Description.               |
|-------------------------------|--|----------------------------|
| Boat harbour.....             | Stuart channel.....                    | Steel, conical, red.       |
| Entrance point.....           | " ".....                               | " " "                      |
| Reynold point.....            | " ".....                               | Spar, red.                 |
| Danger rock.....              | " ".....                               | " " "                      |
| Gallows point.....            | Nanaimo harbour.....                   | Platform, ball, red.       |
| South channel.....            | " ".....                               | " diamond, black.          |
| Middle bank.....              | " ".....                               | " ball, red.               |
| South channel (w.).....       | " ".....                               | " diamond, black.          |
| Satellite reef.....           | " ".....                               | " ball, red.               |
| Middle bank (s.w.).....       | " ".....                               | Spar, red.                 |
| Middle bank (w.).....         | " ".....                               | " " "                      |
| Carpenter rock.....           | " ".....                               | Platform, ball, black.     |
| Mill stream.....              | " ".....                               | " black.                   |
| Passage rock.....             | Newcastle Island passage.....          | " " "                      |
| Departure bay reef.....       | Departure bay.....                     | " ball, red.               |
| Dorcas rock.....              | Dorcas point.....                      | Spar, black.               |
| Hornby Wharf reef.....        | Lambert channel.....                   | " " "                      |
| Reef bluff (s.).....          | Baynes Sound.....                      | Steel, conical, triangle.  |
| Reef bluff (w.).....          | " ".....                               | " red.                     |
| Village point.....            | " ".....                               | " triangle.                |
| Grassy point.....             | " ".....                               | Steel, can, black.         |
| Kelp bar (w.).....            | " ".....                               | Spar, red.                 |
| Kelp bar (e.).....            | " ".....                               | " " "                      |
| Atrevida reef.....            | Malaspina strait.....                  | " " "                      |
| North reef.....               | North end, Texada island.....          | Spar, black.               |
| Shark spit.....               | Marina island.....                     | Steel, conical, red.       |
| Whaleton rock.....            | Whaleton Bay.....                      | Spar, red.                 |
| Siwash rock.....              | Johnston strait.....                   | " black.                   |
| Ripple reef.....              | " ".....                               | Steel, can, red and black. |
| Swan rock.....                | Addenbrooke point, Fitzhugh sound..... | Spar, black.               |
| Walbran rock.....             | Telegraph passage.....                 | " " "                      |
| Bloxam rock.....              | " ".....                               | " " "                      |
| Centre bank.....              | Skeena river.....                      | Steel, nun, red.           |
| Hazel point.....              | Middle passage.....                    | Spar, red.                 |
| Kitson bank (1).....          | Prince Rupert approach.....            | Steel, conical, red.       |
| Kitson bank (2).....          | " ".....                               | " " "                      |
| South Porpoise.....           | " ".....                               | Spar, red.                 |
| North " (1).....              | " ".....                               | " black.                   |
| " " (2).....                  | " ".....                               | " " "                      |
| " " (3).....                  | " ".....                               | " " "                      |
| Tree bluff.....               | Chatham sound.....                     | Steel, can, drum, black.   |
| Ellinor rock.....             | Prince Rupert approach.....            | " red and black.           |
| Kestrel rock.....             | " ".....                               | Spar, black.               |
| Petrel rock.....              | " ".....                               | Can, steel, black, cage.   |
| Tugwell reef.....             | Metlakatla.....                        | Spar, black.               |
| Harbour channel (w.).....     | " ".....                               | Platform, black.           |
| Harbour channel (e.).....     | " ".....                               | " " "                      |
| Sparrowhawk rock.....         | Cunningham passage.....                | Steel, can, red and black. |
| Hankin reefs.....             | " ".....                               | Platform, red.             |
| Dodd passage.....             | Port Simpson.....                      | Spar, black.               |
| Harbour reefs.....            | " ".....                               | Steel, conical, red.       |
| Lion point.....               | Portland canal.....                    | " conical.                 |
| Salmon river.....             | " ".....                               | " can, cage.               |
| Portland canal flats (1)..... | " ".....                               | Platform.                  |
| " " (2).....                  | " ".....                               | " " "                      |

In addition to the above list of unlighted buoys 18 gas buoys are maintained and regularly charged with calcium carbide. These acetylene buoys are similar to the standard acetylene buoys used in eastern waters.



## METEOROLOGICAL SERVICE AND MAGNETIC OBSERVATIONS.

The number of persons in receipt of pay from the Meteorological Service, for various duties performed in connection therewith has been 251. Of this number 25 have been employed in the central office and these together with a few at outside stations, devote their whole time to the work of the service; others are occupied in observing during only a portion of each day and others again, are employed only to attend to the display of storm signals when notified.

Since the issue of the last report new stations have been opened in the different provinces, viz., in British Columbia, four stations of class 2, three stations of class 3; in Alberta, five stations of class 2, fourteen stations of class 3; in Saskatchewan, thirteen stations of class 2, six stations of class 3; in Keewatin, two stations of class 1; in Manitoba, three stations of class 2; in Ontario, one station of class 1, four stations of class 2; in Quebec, two stations of class 2, three stations of class 3; in Nova Scotia, one station of class 1, one station of class 2; in Prince Edward Island, one station of class 2; in Newfoundland, one station of class 1.

There are now in the Dominion, Newfoundland and Bermuda 469 stations from which either daily, weekly or monthly meteorological reports are received. The work at the majority of these stations is performed voluntarily by the observers who have been supplied with instruments and appliances. Much of the knowledge of the climatology of Canada is due to the zealous efforts of the observers.

Stations reporting by telegraph to the central office for the weather map have been increased and Vancouver and Prince Rupert, in British Columbia, have been substituted for New Westminster and Port Simpson.

The storm signal display stations now number 99 and at seven other ports, signal masts are in course of erection.

During the year, many of the stations were inspected by officials from the central office, and localities visited with a view of the extension of the service. Several stations on the Mackenzie river were visited, also Norway House, station, Keewatin and York Factory and Fort Churchill, Hudson Bay.

The new central meteorological office is admirably adapted for the requirements of the service.

The climatological report for 1908, is in the hands of the printer and the manuscript for 1909, is ready for printing. The other publications including the daily weather map, monthly weather review and map, have been issued regularly. Forecasts to the number of 14,945 were issued from the central office, of these 86.1 per cent were verified. In the Pacific coast division, 4,823 forecasts were issued, of which, 83.2 were verified; 1,690 storm warnings were issued to ports on the Great Lakes and Atlantic coast, 91.1 were verified. Warnings and forecasts were regularly issued to Newfoundland.

The stations organized in 1908, in the valley of the Mackenzie river, together with those on the shores of Hudson bay, make it possible to draw the isobars with fair accuracy, to the most northerly confines of Canada.

The time exchanges between Toronto, Quebec, Montreal and St. John, N.B., have been carried on. Signals continue to be automatically repeated from land telegraph

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to the wireless station at Camperdown, N.S., and these signals are picked up when ships are far from land.

The equatorial telescope at the central station has been chiefly used in obtaining maps of the sun's surface. Photograph work was tried in May and June of Halley's comet, and one or two good pictures were obtained.

The report of the Superintendent of the Meteorological and Magnetic Service forms an appendix to this report.

## WRECKING PLANT.

The yearly subsidies were paid to contractors when they became due and proof shown of the maintenance of the plant in readiness to render assistance, in cases of casualties to vessels. The amount of the subsidy to each contractor is \$10,000 per annum, paid semi-annually.

The contracts were made for a period of five years with each contractor. For the lower St. Lawrence, the contract was made with Messrs. Geo. T. Davie & Sons, Levis, P.Q., headquarters of the salvage plant at Quebec; for the maritime provinces with the Dominion Coal Company, headquarters of the salvage plant, North Sydney, C.B.; for British Columbia, the British Columbia Salvage Company, headquarters for the salvage plant, Victoria.

The following is a list of vessels assisted or salvaged by the plant of the Dominion Coal Company, Limited, during 1910-11—

April 27.—Sent tug *Douglas H. Thomas* in search of small sail boat containing two men reported off Flint island; boat being in disabled condition and storm approaching.

May 4.—Sent tug *Douglas H. Thomas* to the assistance of SS. *Ellen* which steamer grounded on south bar near the entrance of Sydney harbour, but came off at high tide without assistance. Tug stood by in case her services were required.

May 30.—Tug *Douglas H. Thomas* pulled stranded schooner *Ida M.* off the shore in Great Bras D'Or lake.

June 1.—Tugs *Douglas H. Thomas* and *C. M. Crauchan* ashore at Baulene and all stood by ready for service for some considerable time.

June 6.—Tug *Douglas H. Thomas* was despatched to Langly Doons, Mnq., to render assistance to schooner *Winnifred*, ashore there.

June 8.—Sent tug *C. M. Winch* to assistance of SS. *Heathcote* reported ashore near Sydney Mines.

June 19.—Sent tug *Douglas H. Thomas* and SS. *Louisburg* to assistance of stranded steamer *Heimdal* at Sable Island.

June 22.—Offered services of SS. *Cacouna* to stranded steamer *Prinz Oscar*, ashore at Point Armour in Gulf of St. Lawrence.

June 28.—Tug *C. M. Winch* pulled loaded steamer *Sygna* off shore in Sydney harbour.

September 14.—Tug *Douglas H. Thomas* pulled schooner *Nyanza* off rocks near Cranberry Head.

September 23.—Tug *Douglas H. Thomas* rendered assistance to stranded schooner *Myrtle V. Hopkins* near Cranberry Head.

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September 29.—SS. *Louisburg* picked up two dories off Glace Bay belonging to fishing vessel *Shamrock* and delivered them to owners.

October 3.—Tug *Douglas H. Thomas* salved schooner *Bessie* in Sydney harbour after later had parted her moorings in storm and was drifting in helpless condition.

October 8.—Sent *Douglas H. Thomas* to assistance of stranded schooner *Roseway* in Strawberry cove, Anticosti.

October 22.—Tug *Douglas H. Thomas* was sent to assistance of trawler *Nordcaper*, which was flying signals of distress off Lowpoint lighthouse, and towed her safely to port.

November 3.—Tug *Douglas H. Thomas* was sent to assistance of stranded schooner *Cora* on Petries ledges, off Sydney harbour.

November 4.—Tugs *Douglas H. Thomas* and *C. M. Winch* and steamer *Cape Breton* pulled off steamer *Harlow*, ashore in Sydney harbour.

November 5.—Tug *Douglas H. Thomas* pulled schooner *Baulene* off rocks on Petries ledges.

November 29.—Received report of steamer off Glace Bay flying signals of distress. *Douglas H. Thomas* was despatched to her assistance.

November 29.—Tug *Douglas H. Thomas* towed disabled schooner *Georgi Campbell* from Port Aux Basque to North Sydney.

January 1.—Tug *Douglas H. Thomas* towed disabled schooner *J. B. Hodgkins* from Bay St. George to North Sydney.

January 29.—Tug *Douglas H. Thomas* was despatched to assistance of schooner *Theodore Roosevelt*, which was flying signals of distress off Sydney harbour, and towed her to North Sydney.

March 24.—Tug *Douglas H. Thomas* and steamer *Louisburg* were sent to the assistance of passenger steamer *Bruce*, which stranded at Main-a-dieu. Passengers were taken off by SS. *Louisburg* and brought to Louisburg. Mails and baggage were salved by *Douglas H. Thomas*.

The services rendered by the plant of Messrs. George T. Davie & Sons—

Str. *Murray Bay*, SS. *Prinz Oscar*, C.G.S. *Gulnare*, Construction Dredge Company's SS. *General Wolfe* and Messrs. M. P. & J. T. Davis' *Caisson*.

The services rendered by the British Columbia Salvage Company, Limited during 1910-11—

May, 18-25, tug *Tartar* sunk at Lund, B.C., raised vessel and brought her to Esquimalt.

May 15.—*John L. Card*, raising vessel sunk in Victoria harbour.

August 5.—Tug *Sadie*. Salving vessel from rocks at Beechy Head.

August 26 to September 11.—*Princess May* ashore in Lynn canal. Raising vessel and bringing to Esquimalt.

October 21.—SS. *Bangor* ashore Bedford island. Going to her assistance and standing by.

November 18-23.—Tug *Hope*. Raising vessel sunk in Nanaimo harbour.

December 2.—*Northwestern* ashore at San Juan island. Raising vessel and taking to Seattle.

December 19.—*Prince George* ashore off northern entrance Vancouver narrows. Going to her assistance and towing off.



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January 26-27.—SS. *Tees* rendering assistance to vessel ashore near Wreck bay, West coast.

February 3.—*Titania* rendering assistance to vessel ashore at Turn Point and bringing to Victoria.

January 26.—*Cottage City*. Going to assistance of vessel ashore near Cape Mudge, Valdez island.

## MONTREAL HARBOUR COMMISSIONERS.

In the year 1910 a greater amount of work was done than in any year since the inception of harbour improvements in the port of Montreal.

Amongst the work begun, completed, and put in operation was the construction of a high level railway extending from Victoria pier to Molson's creek. Twelve subway approaches to the harbour have been built and are open to the public, replacing twelve level crossings. Grain elevator No. 2, to have a storage capacity of 2,000,000 bushels, is being erected by the harbour commissioners under the superintendence of Mr. John S. Metcalf. This work it is expected will be completed by the 1st of May, 1912.

The enlargement of Victoria pier, and the creation of a market basin for river craft has been advanced. The basin will give a low level quay length of 4,800 lineal feet on the inside and five ocean steamers, berths, built to high level, on the outside.

Preliminary arrangements have been made with Vickers Sons & Maxim, Limited, for a floating dry dock at Molson's creek in the harbour. At this point it is intended to create an area of land of thirty acres with a protected basin for the dock and the establishment, if necessary, of a high level coal handling terminal in the eastern part of the city.

The permanent concrete wharf extension, planned for the Dominion Coal Company at Hochelaga, has been completed. The usual harbour dredging and considerable constructional work, has been done by the engineering department of the commissioners.

The Canadian Northern Steamship Company inaugurated a steamship service between Montreal and Bristol, England, during the year. The steamers *Royal George* and *Royal Edward*, 12,000 tons each, have kept up a successful fortnightly service between the two ports mentioned.

The *Saturnia* of the Donaldson line was put on the Glasgow route and the Canadian Pacific Railway Company inaugurated the New Zealand-Australia service; these additions to the passenger and freight service of the port have been eminently satisfactory.

The season of navigation, of the St. Lawrence river route, was the driest in many years and the depth of water reached its lowest stage earlier than usual, but the steamers of all lines navigated the river to Montreal day and night successfully until the month of November.

The report of the harbour commissioners contains references to special visits of the Governor General of Canada, Lord Brassey and a delegation of the Chamber of Commerce of Bristol, England, at different periods, who independently inspected

the port and gained a knowledge of what has been accomplished towards making Montreal a great seaport.

The harbour commissioners have been able to record general improvements in vessel accommodation, appliances for loading and discharging freight and for warehousing, delivering, and railway transfer of goods.

The traffic department shows an increase of 1,500 cars of freight loaded and discharged directly into vessels and sheds, over the previous year. This increase took place notwithstanding the heavy decrease in apple shipments of 384,000 barrels, representing about 2,000 cars, as compared with 1909. The high level tracks under construction were sufficiently advanced to allow them to be used. Two new locomotives were purchased, making five in all in use, by the traffic department. A building for the accommodation of the locomotives was under construction, and the building of the high level tracks interfered with the handling of freight, but, as the construction is now complete, additional business will be derived from the traffic between the several railway terminals.

The total number of miles of railway track on the harbour commissioners property is 28.865 miles. This railway system connects with the Canadian Pacific, Grand Trunk and Canadian Northern terminals, and freight is conveyed, from one railway to another and from each railway to vessels at the wharves.

Elevator No. 1 was fully utilized, its service was rendered more valuable by the construction of a second marine tower. The total quantity of grain elevated amounted to 14,906,569 bushels, the greatest since its construction and being 3,000,000 bushels in excess of 1909. The conveyor equipment from the elevator to the sheds and into vessels was finished during the year. The great advantage of these conveyors has been shown by the facility with which grain can be loaded into compartments of vessels, whilst loading of package freight, or discharging of cargo, can be carried on at the same time and thus give despatch to the loading and discharging of vessels.

The greatest quantity of grain in store at the elevator at any one time was 1,021,107 bushels. In addition to the operations at the elevator, a number of floating elevators, purchased from the Montreal Grain Elevator Company, were used to facilitate the grain movements by the commissioners. The floating grain elevators are placed between grain vessels unloading and the vessels receiving cargo.

The sheds number 14 and consist of a ground floor and upper story. Elevators have been put in use during the year to raise articles in quantities from the lower floor to the upper one for storing purposes. The freight handling hoists from holds of vessels have been working with satisfaction and are effective. Freight can be delivered to cars or wagons, when not stored in the sheds, by means of transporters with cantilever arms. The arms are long enough to extend out of the sheds on the harbour side and take cargo from the hatches of ships. The transporters can be travelled on carriages to the other side of the sheds, and articles lowered to wagons or railroad cars. Freight is also placed upon the floors of the sheds when hoisted, or taken from the floors and lowered into the vessels.

The demand for more shed room has led to the consideration of building four (4) more on the Tarte pier in the east end of the city.

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The electric power for lighting the sheds and wharves has been obtained from the Montreal Light, Heat and Power Company, and unlimited power has always been available.

Dredging, filling in and excavation have been carried on extensively; new areas of land have been added to the property of the commissioners; the channels have been widened at certain points. In the scheme of extensions, attention was given to enlarging the central part of the harbour, thereby giving more accommodation.

In connection with the new plant purchased is a powerful dredge and a powerful ice-breaking tug for winter operations.

Fire protection has not been neglected, but an equipment provided and maintained by the commissioners is available in case of fire on board vessels or at any part of the harbour property.

The life-saving appliances have been increased and the older portions made more effective.

The seventy-five (75) ton floating crane has justified its purchase by the amount of heavy lifting to which it has been applied.

The extent of the wharfs at the end of 1910 has been stated in the report to be as follows:—

|   |             |
|---|-------------|
| For vessels drawing 30 feet and over.. . . .  | 3.540 miles |
| For vessels drawing 25 to 27½ feet.. . . .    | 3.000 miles |
|   | <hr/>       |
|   | 6.540 miles |
| For vessels drawing 20 feet and under.. . . . | 0.594 miles |
|   | <hr/>       |
| Total wharf accommodation.. . . .             | 7.132 miles |

The receipts and disbursements in connection with revenue account, as is shown by the statement of the secretary of the harbour commissioners, shows a balance of revenue over disbursements. The revenue was also in excess of 1909, and is as follows for the calendar year:—

|  | 1909.        | 1910.        |
|--|--------------|--------------|
| Wharfage on imports.. . . .                  | \$208,927 55 | \$258,996 20 |
| Wharfage on exports.. . . .                  | 97,733 00    | 94,077 34    |
| Wharfage on local traffic.. . . .            | 75,636 58    | 86,798 76    |
| Switching cars.. . . .                       | 104,266 43   | 124,801 79   |
| Rentals, harbour, sheds.. . . .              | 101,500 00   | 100,599 97   |
| Grain elevator, No. 1.. . . .                | 65,987 90    | 92,428 55    |
| Rentals, harbour tracks and properties.. . . | 31,351 70    | 34,057 29    |
| Floating crane.. . . .                       | 2,369 00     | 3,067 32     |
|  | <hr/>        | <hr/>        |
|  | \$687,772 16 | \$794,827 22 |

A new source of revenue sprung from the operations of the floating elevators purchased from the Montreal Grain Elevator Company. This revenue amounted to \$41,287.95, which added to the above revenue, makes a total of \$836,115.17. The disbursements charged to revenue account amounted to \$812,668.92.



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The amount disbursed on capital account was \$1,454,926.93, divided as follows:—

|  |                |
|--|----------------|
| High level railway.. . . .                 | \$ 406,409 95  |
| Grain Elevator, No. 2.. . . .              | 360,441 53     |
| New Victoria pier and market basin.. . . . | 269,017 90     |
| Improvements, eastern section.. . . .      | 137,495 72     |
| Floating elevators, plant account.. . . .  | 100,000 00     |
| Sundry items.. . . .                       | 181,561 83     |
|  | <hr/>          |
|  | \$1,454,926 93 |

The total debenture indebtedness of the corporation is \$14,292,000, of which \$1,872,000, is to the public, and \$12,420,000 to the Dominion government, upon which the average rate of interest is 3.21 per cent.

The following statement of shipping tonnage which arrived in the port of Montreal is taken from the tabular statement of the harbour master for 1910.

|  | Number. | Tonnage.  |
|--|---------|-----------|
| Transatlantic ships.. . . .  | 411     | 1,658,414 |
| Vessels which arrived from the Lower St. Lawrence and maritime provinces.. . . . | 336     | 574,808   |
| Vessels from inland ports.. . . .  | 13,636  | 4,327,799 |
|  | <hr/>   | <hr/>     |
| Total.. . . .  | 14,383  | 6,561,021 |

The increase of tonnage over the previous year was 1,503,114 tons.

Navigation opened on April 1, 1910, and closed December 7.

### TORONTO HARBOUR COMMISSION.

Toronto harbour was clear of ice on March 20, 1910, which was seven days earlier than it opened in 1909. Navigation was closed for 81 days or three days longer than in the previous year. The last vessel before the closing of navigation arrived in the harbour on December 5.

Three thousand four hundred and two vessels of 1,582,961 registered tonnage entered during the season of 1910, an increase of 461 vessels and 102,669 registered tons over last year's shipping.

The harbour buoys were placed in position on March 26, five days earlier than last year; and raised on December 8, or seven days earlier than last year.

The lights at the Queen's wharf were lighted, for the first time on March 28, and were discontinued on December 8.

Much dredging was done. A new cut was dredged to Haney & Miller's new dock and dredging done at the Alexander Brown Milling Company's wharf slip.

The storm signals were resumed on April 5 and continued to be of much aid to navigators, mostly all the predictions concerning approaching storms being verified.

Very extensive repairs were made on the eastern entrance to the harbour, an area of 32 x 34 feet on the north and 101 x 40 feet on the south end of the east pier was rebuilt of concrete.

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Good progress has been made on the improvements to the western entrance to the harbour and should be completed during the coming year.

The minimum depth of water in the channel is now 18 feet low water.

The receipts for the fiscal year were \$14,891.71; the expenditure, \$13,417.51, leaving a balance of \$1,474.20 for the year.

A detailed report of the harbour commissioners will be found in the supplement to the Annual Report for 1910.

## THREE RIVERS HARBOUR COMMISSION.

The Harbour Commission of Three Rivers is composed of:—P. A. Drolet, Esq., chairman; Joseph L. Fortin, Esq.; L. P. Normand, Esq.; L. E. Dufresne, Esq.; J. A. Peltier, Esq.; George Balcer, secretary.

The wharf accommodation extends from the west bank of the St. Maurice river to the ice-breaker, a distance of about 5,500 feet. Within this distance there are several wharfs; the St. Maurice Lumber Company's wharf used for local and inland waters traffic, and with one berth for ocean-going steamers; the harbour commissioners wharf with accommodation of 1,350 feet, the depth of water at the front being from 30 to 35 feet, and reserved exclusively for ocean vessels. The commissioners have another wharf, 490 feet in length with 25 feet depth of water. This is used for passenger and freight lines.

The Richelieu and Ontario Navigation Company's wharf is between the two last mentioned, is used by the steamers of that company.

A private wharf lies between the 300 foot one of the commissioners' and the government new dock, which is 2,000 feet long, built of concrete and intended exclusively for ocean traffic, the water along its front being 30 feet deep.

The commissioners' wharf is from 200 to 275 feet wide and the government wharf, from 200 to 300 feet, the area of the latter being over 500,000 square feet.

The old Grand Trunk wharf and the one at Cap de la Magdaleine also accommodates large freight and passenger traffic.

A railway line runs along the water front and branches connect the port with manufacturing centres.

The port is also directly connected with the most important trunk lines of the country, and facilities for loading and unloading freight from cars to the vessels and from the vessels to the cars have been provided.

On the south side of the harbour there is no railway siding.

The port is favourably situated for shipping, the channel being from 30 to 50 feet deep along the wharfs with very little current and a roadstead from 1,200 to 1,500 feet wide.

Fifty-three steam vessels, with a registered tonnage of 113,000 tons, registered at the port during the season of navigation—a gain of six vessels and 13,000 tons over last year's shipping. This increase is in ocean shipping; the number of inland vessels decreased from 1,179 in 1909 to 772 in 1910. This decline was largely due to the great quantity of pulp wood shipped from the province of Quebec in 1909.

This large export was due to the knowledge that the Quebec legislature would pass a law prohibiting the export of pulpwood from Crown lands. This law, now in force, has stimulated the pulp industry at Three Rivers and surrounding districts.

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The import of coal from the maritime provinces continues to increase notwithstanding the fact that many factories are using electric power. The harbour commissioners report that the last year was the most prosperous in the history of the port.

The total receipts for the year were \$31,683.95; the total expenditure for the year was \$17,877.10.

A full report of the harbour commissioners will be found in supplement No. 1 to the report of 1910.

#### NORTH SYDNEY, N.S., HARBOUR COMMISSION.

The members of the commission are:—Messrs. Peter J. M. McDonald, M. W. Lawlor and William Hackett, secretary.

The total number of vessels which registered at the port of North Sydney during the year was 2,200, with a total registered tonnage of 1,434,014 tons, a decrease of 25 vessels, but increase of 43,395 tons on the previous year's shipping.

The Dominion Coal Company shipped from their pier at North Sydney 1,743,031 tons coal. The Nova Scotia Steel and Coal Company, Limited, shipped 529,487 tons coal and 144,891 tons ore.

The Dominion Iron and Steel Company, Limited, received 947,000 tons iron ore, limestone and other material, and shipped 63,000 tons of steel rails during the year.

The receipts amount to \$6,564.35; the expenditure to \$3,297.47, leaving a balance on hand of \$3,266.88.

A detailed report will be found in supplement No. 1 to Marine Report for 1910.

#### PICTOU, N.S., HARBOUR COMMISSION.

The Harbour Commission is composed of Messrs. J. R. Brown, W. A. McIntosh, J. C. Reid and D. A. Barry, commissioners, and Henry G. Ives, secretary-treasurer.

The number of vessels entered was 913, with a total tonnage of 212,676 tons.

The revenue for the year amounted to \$1,175.60; the expenditure to \$265.85, and the balance in the Bank of Nova Scotia is \$909.75.

A full account of the transactions of the commission will be found in supplement No. 1 to the Marine Report for 1910.

#### BELLEVILLE, ONT., HARBOUR COMMISSION.

The importation for the year was 14,589 tons coal, 1,125 tons merchandise, 20 M laths, 164,000 ft. lumber, 51 cords wood, 70 bbls. oil and 2½ tons hay.

The exports were 13 M shingles, 1,121 tons merchandise and 1,754 boxes cheese.

The harbour dues amounted to \$1,872.89; disbursements, \$23.95; balance on hand, \$1,848.94.

The total receipts of the harbour commissioners for the year was \$2,282.73; the expenditure for the same period \$2,231.90. The amount deposited to the credit of the commissioners was \$50.83.

The total amount deposited to the credit of the sinking fund was \$2,803.84.



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## QUEBEC HARBOUR COMMISSION.

New landing sheds were erected on the tidal harbour and river fronts of the pier to replace the buildings on Point-à-Carcy pier, which were destroyed by fire on October 16, 1909. A new shed, No. 19, was erected; a larger shed was erected to replace No. 21, increasing the floor area by 5,280 sq. feet, and the wharves where burnt were cleared and repaired. Two new tracks were laid from the car ferry to the Dalhousie street lines, and a building erected on the cross wall containing the commissioners stores and a police station.

The custom house pond has been dredged to a depth of 15 feet at low water for the purpose of establishing a pontoon berth for the accommodation of coasting vessels; a new carriage roadway has been completed, and a new railway line, 5,400 feet long, has been laid along the western end of the 'embarkment.' The two roads have added 87,000 square feet to the ground used for coal storage.

Shed No. 20 was enlarged, railway lines between the shed and dock front put in good order and additional lights installed. All the railways of the commission were put in thorough repair, the docks repaired and a Strauss Bascule bridge to open the entrance to the wet dock will soon be constructed.

The cross wall drawbridge was operated for the first time, the past season on April 2, and closed for the last time on December 7.

Navigation was open in the harbour all winter. The *Montcalm* left the custom house basin for the lower St. Lawrence on March 3, and returned on the 6th. This steamer, in conjunction with the *Lady Grey* succeeded in opening navigation between Quebec and Montreal on April 3.

The ice in the river St. Charles broke up on April 9.

Six hundred and three ocean-going steamers besides a large number of steam barges and schooners, berthed in the Louise docks and at the breakwater and Point-a-Carcy wharfs.

The last passenger and mail steamer the SS. *Montcalm* arrived in the harbour on November 2, and left on November 27.

Three hundred and forty-seven vessels of a total tonnage of 1,578,135 tons register entered the different docks and landed 283,413 tons of cargoes.

Ninety-five vessels of a total tonnage of 341,633 tons register and cargoes of 26,525 tons left the harbour during the season of navigation.

The increase of vessels in 1910 over 1909 was 33 vessels, 257,692 registered tonnage and 68,846 tons freight inwards and 6 vessels, 246,627 tons register and 5,279 tons freight outwards.

Thirty thousand eight hundred and three R.S. lumber and timber were shipped in 1910, against 28,741 in 1909 or an increase of 2,062 R.S. lumber and timber.

Lower ports steamers, 2,861 tons, cargo shipped 10,065 tons, 157,487 bushels of grain and 148,060 railway ties were landed.

Ten thousand four hundred and ninety-seven first-class, 43,963 second and 107,870 third class passengers were landed during the year ending December 31, 1910.

The total revenue for 1909 was \$102,165.84; 1910 was \$121,036.84, an increase of \$18,871.

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The total revenue for the year was \$121,036.84; the expenditure, \$117,007.16 and the surplus \$4,029.68.

### MONTREAL PORT WARDEN.

The river St. Lawrence was officially declared to be free from ice on April 4, being 15 days earlier than last year.

The Longueuil ferry began regular service on April 1, 1910.

The Dominion government steamer *Lady Grey* arrived in the port of Montreal on April 3, and the *Wobun* passed Quebec for Three Rivers and the *Kronprinz Olaf* arrived from Sydney on April 11.

On May 17, the SS. *Manchester Mariner* passed outward through the Straits of Belle Isle, which is considered the earliest on record.

The wireless telegraph stations in the gulf, and the numerous signal stations in the river St. Lawrence, have greatly facilitated early navigation through the Straits of Belle Isle.

A fortnightly service has been inaugurated between Montreal and Avonmouth, Great Britain, by the Canadian Northern Railway's 'Royal Line.'

The *Royal Edward* and the *Royal George* make fast and regular trips on this route, during the season of navigation.

The year has been remarkably clear of accidents to shipping between Montreal and Quebec, only one serious accident having occurred.

Three hundred and ninety-nine transatlantic or foreign sea-going vessels, with a total tonnage of 1,638,581 tons, reported at the Port Warden's office during the year, against 367 vessels with 1,425,173 tons last season, an increase of 32 vessels and 213,408 tons.

Three hundred and thirty-three vessels of all classes, with a tonnage of 570,705 tons entered from the lower ports, against 292 vessels and 468,422 tons in the previous year, an increase of 41 vessels and 102,283 tons, 99 vessels of all classes with a tonnage of 73,681 tons, against 109 vessels of 71,655 tons, a decrease of 10 vessels and an increase of 2,026 tons over last year, cleared from Montreal to the lower ports.

The total revenue of the port warden's office for the year was \$27,888.93 and the expenditure \$11,407.64, leaving a balance of \$16,481.29.

### WRECKS AND CASUALTIES.

Two hundred and thirty-nine sea-going vessels were reported as wrecked, partially wrecked, suffered serious or slight damages to ship, rigging or cargoes.

The tonnage in this way affected was 147,595, the total damage \$864,010 and the number of lives lost 85. Of the total number of vessels, 58 were total wrecks with a loss of \$481,300, while 57 vessels were very slightly, or not damaged, having in most instances been stranded in storms and escaped without any material harm. One hundred and twenty-four vessels were partially wrecked with a loss of \$382,710.

Twenty vessels were reported as totally wrecked in inland waters, with a loss of \$480,400; 42 were partially wrecked with a loss of \$225,170 and 20 vessels slightly damaged, or in some instances incurring no loss. The number of vessels affected was, therefore 82 vessels of 63,970 tons, loss \$705,570 and 16 lives.

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The report of wrecks and casualties for the year ending June 30, 1910, but a few vessels wrecked in 1908 are recorded in the last report, which will be found in appendix No. 44 of Supplement No. 1 to this report.

## PILOTAGE.

Reports for the calendar year 1910, have been received from 21 pilotage authorities. They are published in supplement No. 1 to this report and contain information respecting the number of pilots, the number of vessels piloted and the financial transactions.

The number of pilots in active service according to those returns is 314 and the amount earned \$417,412.96. Deducted from the earnings are the expenses of each pilotage authority for transacting the business of the pilotage district and for decayed pilotage funds where these funds exist.

| Name.                         | No. of pilots. | Gross receipts. |
|-------------------------------|----------------|-----------------|
| Buctouche, N.B. . . . .       | 6              | \$ 163 50       |
| Caraquet, N.B. . . . .        | 6              | 288 80          |
| Halifax, N.S. . . . .         | 29             | 34,780 22       |
| Miramichi, N.B. . . . .       | 20             | 11,208 67       |
| Montreal, P.Q. . . . .        | 50             | 81,868 83       |
| Northport, N.S. . . . .       | 2              | 107 50          |
| Nanaimo, B.C. . . . .         | 7              | 34,027 05       |
| New Westminster, B.C. . . . . | 1              | 906 78          |
| Parrsboro, N.S. . . . .       | 5              | 558 00          |
| Pugwash, N.S. . . . .         | 7              | 785 00          |
| Quebec, P.Q. . . . .          | 84             | 130,228 14      |
| Restigouche, N.B. . . . .     | 7              | 5,458 61        |
| Richibucto, N.B. . . . .      | 5              |                 |
| Richmond, N.S. . . . .        | 3              |                 |
| Shediac, N.B. . . . .         | 3              | 763 81          |
| St. Ann's, N.S. . . . .       | 4              | 544 00          |
| St. John, N.B. . . . .        | 23             | 37,895 62       |
| Sydney, N.S. . . . .          | 35             | 32,067 00       |
| Vancouver, B.C. . . . .       | 6              | 29,223 37       |
| Victoria, B.C. . . . .        | 4              | 14,054 98       |
| Westport, N.S. . . . .        | 7              | 2,483 08        |
|                               | <hr/>          | <hr/>           |
|                               | 314            | \$417,412 96    |

The Montreal and Quebec Pilotage districts are under the direct control of this department and under the supervision of Captain L. A. Demers, general superintendent of pilotage.

According to his report, the 50 pilots made 882 trips inward and 833 outward and received as fees \$81,868.83. The amount earned by tour-de-rôle pilots was \$11,526.46. Seven hundred and nineteen sea-going vessels, 310 lake steamers, 34



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schooners and 12 barges, tugs and steam yachts, reported at the pilotage office during the year. Eleven pilots were pensioned, one was dismissed and one resigned.

The number of pilots in active service for and below Quebec is 84; apprentice pilots, 14; pilots pensioned, 6; the number of pilotages effected was 1,841, and the total earnings \$130,228.14.

### SICK AND DISTRESSED MARINERS.

Under the provisions of the Canada Shipping Act, chapter 113, Part V, s. 384 R.S., dues of 1½ cents per ton, registered tonnage, are levied on every vessel entering any port of the provinces of Quebec, Nova Scotia, New Brunswick, Prince Edward Island and British Columbia. The money thus collected forms the 'Sick Mariners Fund.' Vessels of the burden of 100 tons and less pay duty once in each calendar year, and vessels of more than 100 tons, registered tonnage, three times in each year.

The officers and seamen of all fishing vessels not registered in Canada do not pay sick mariners dues nor participate in the benefits accruing therefrom, but such vessels registered in Canada may pay dues and participate in the benefits, and if of more than 100 tons only for the voyage at the beginning of which payment has been made, but such vessels shall enjoy the same rights and benefits as are enjoyed by vessels which pay dues and are not engaged in fishing.

The Sick Mariners Act does not apply to the province of Ontario, so no dues are collected from vessels in that province.

At the port of Quebec sick mariners are cared for at the Jeffery Hale and the Hotel Dieu hospitals at a per diem allowance of \$1.50 per seaman, including medical attendance and board.

At the port of Montreal sick seamen are cared for at the General hospital and at the Notre Dame hospital—the charge per diem at each institution being \$1.50 per seaman, including board and medical attendance.

At the port of Chicoutimi, sick seamen are cared for at the hospital of St. Valier at a per diem charge, including board and medical attendance, of \$1.20 per seaman.

Marine hospitals are maintained in Louisburg, Yarmouth, Pictou, Sydney and Lunenburg in the province of Nova Scotia, and the sick seamen at Halifax, N.S., are cared for in Victoria General hospital at \$1.50, including board and medical attendance, per diem for each seaman.

At Charlottetown, Prince Edward Island, sick seamen are cared for at the Charlottetown and the Prince Edward Island hospitals under arrangement made by the department with the managers of those institutions for a per diem charge per man of \$1.50 including board and medical attendance.

The marine hospital of Victoria, British Columbia, has a medical superintendent and a keeper, each of whom receives \$600 per annum. The keeper receives \$5 per week for board and attendance of each seaman.

At Vancouver, sick seamen are attended at the Royal Columbian hospital at a cost of \$1 per day for each seaman.

At Nanaimo, B.C., sick mariners are treated at the Nanaimo hospital at \$1 per day each for board, nursing and lodging, the medical officer receiving a salary of \$600 per annum.

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At St. John, N.B., sick seamen are attended at the General Public Commissioners' hospital at a cost of \$1.50 per day for each seaman.

A marine hospital is operated and maintained by the department at Douglas-town, N.B. The medical officer receives a salary of \$400 and the keeper \$250 per annum.

Where no hospital is maintained in any part of the maritime provinces, Quebec and British Columbia, the collectors of customs are authorized to care for sick seamen entitled to receive the benefits of the Act.

Statement of receipts and expenditure on account of 'Sick and Distressed Seamen' from the fiscal year 1900 to 1910, both inclusive.

| Year.     | Receipts.   | Expenditure. |
|-----------|-------------|--------------|
| 1900..... | \$59,971 84 | \$32,743 30  |
| 1901..... | 59,783 34   | 34,944 93    |
| 1902..... | 65,853 83   | 51,827 12    |
| 1903..... | 64,851 55   | 48,151 48    |
| 1904..... | 61,778 29   | 50,801 78    |
| 1905..... | 58,372 34   | 51,000 18    |
| 1906..... | 60,183 90   | 50,120 42    |
| 1907..... | 44,704 59   | 34,362 11    |
| 1908..... | 69,364 45   | 59,957 92    |
| 1909..... | 53,732 31   | 66,349 26    |
| 1910..... | 55,567 41   | 54,859 50    |

The total amount of salaries paid to medical officers during the year 1910 was \$14,540.32. The number of seamen treated was 3,234, being 395 less than last year, and the number of days treatment given was 26,084. The total amount spent for services of physicians, not including salaries, and travelling expenses, drugs and board, was \$33,939.

The report of C. H. Godin, M.D., medical superintendent of marine hospitals, forms an appendix to this report.

## SHIPPING AND DISCHARGE OF SEAMEN.

The irregularity with which shipping masters send in returns renders it impossible to make a correct statement of the number of seamen shipped, discharged, the amounts annually collected or a comparison of each year's transactions.

The statistics by provinces of the shipping masters' offices which have sent in returns for the year ending December 31, 1910, are as follows:—

|                              | Shipped.<br>Seamen | Discharged.<br>Seamen | Collected.<br>Fees |
|------------------------------|--------------------|-----------------------|--------------------|
| Quebec.. . . .               | 3,689              | 1,710                 | \$ 2,372 50        |
| New Brunswick.. . . .        | 1,995              | 850                   | 1,256 25           |
| Nova Scotia.. . . .          | 8,234              | 5,988                 | 5,605 50           |
| Prince Edward Island.. . . . | 238                | 44                    | 156 20             |
| British Columbia.. . . .     | 2,579              | 2,477                 | 2,220 80           |
| Total.. . . .                | 16,735             | 11,069                | \$11,611 25        |

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A full statement of shipping master's transactions at each port from which returns have been received, for the year ending December 31, 1910, are contained in supplement No. 1 to the Annual Report for 1910.

### MERCHANT SHIPPING.

A supplement to the 'List of Shipping' is published every month, and those affecting the list, and issued up to date, are included in that volume.

The total number of vessels remaining on the 'Register' book of the Dominion on December 31, 1910, was 7,904, measuring 750,929 tons, being an increase of 136 vessels and 32,376 tons as compared with 1909. Of this number the steamers on the register book were 3,332, with a gross tonnage of 554,974. Assuming the average value to be \$30 per net registered ton, the value of Canadian registered tonnage on December 31, 1910, was \$22,527,870.

The number of new vessels built and registered in the Dominion of Canada during last year was 294, measuring 22,283 tons net register. Estimating the value of the new tonnage at \$45 per ton, the value of new vessels amounts to \$1,002,735.

Two hundred and forty-seven vessels were removed from the register book during the year.

It is estimated 40,070 men and boys were employed during the year 1910 on ships registered in Canada.

### MARINE SCHOOLS.

Seven marine schools have been maintained during the year ending March 31, 1911, which, with the number of lectures and total daily attendance at each, are as follows:—

Halifax, N.S., 32 lectures, 249 total daily attendance.

Yarmouth, N.S., 30 lectures, 260 total daily attendance.

Collingwood, Ont., 29 lectures, 296 total daily attendance.

Midland, Ont., 13 lectures, 120 total daily attendance.

Victoria, B.C., 35 lectures, 645 total daily attendance.

North Sydney, N.S., 22 lectures, 182 total daily attendance.

Vancouver, B.C., 34 lectures, 933 total daily attendance.

Two hundred and five lectures have thus been delivered, with a total daily attendance of 2,685, being one lecture less than delivered last year and 13 more in total attendance.

The late Captain Toge delivered lectures at Montreal, Quebec, Three Rivers and Sorel, which were fairly well attended, but only Victoria and Vancouver, B.C., fully realize the value of the means for acquiring knowledge the department places at the disposal of mariners.

Full particulars are contained in Captain Lindsay's report which forms an appendix to this report.



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## MASTERS AND MATES.

Examinations for all grades of certificates of masters and mates are held at thirteen offices throughout Canada, the names of which, with that of examiners and other particulars, will be found in Captain Lindsay's report which forms an appendix to this report.

Four hundred and sixty-four examinations for the various grades of certificates were held; 364 candidates passed and 100 failed. Only eight men presented themselves for sight test.

During the year ending March 31, 1910, 13 sea-going certificates of competency have been issued to masters, 11 to mates and 26 to second mates; 193 inland and coasting certificates of competency to masters and 113 to mates have been issued. Of the 193 masters' certificates of this class, 26 were temporary, and the total receipts were \$4,314.50 and expenditure \$6,662.52.

During the year ending March 31, 1911, 19 sea-going certificates of competency were issued to masters, 12 to mates and 14 to second mates; 74 coasting certificates of competency to masters, 50 to mates; 36 inland waters certificates of competency to masters and 40 to mates; 1 master's coasting certificate of service and 22 masters' temporary certificates were issued.

The total receipts amount to \$4,446.61 and expenditure to \$5,801.62.

Full details respecting masters' and mates' certificates are contained in an appendix to this report.

## CORRESPONDENCE AND RECORD BRANCH.

The records branch of the department embraces the receiving and despatching of letters. The letters and telegrams received are registered, numbered, stamped with date received, indexed, placed on files, and the files charged and distributed to the officers who take action upon the letters and telegrams. Copies of letters are placed upon the files, and the files examined to ascertain if all letters have been answered or acknowledged, and then they are discharged and placed in receptacles.

The registering of letters consists of entering the number of the file and a brief synopsis of the subject of the letter; the indexing includes pages of personal names in a book, and the card system, locality names, subjects and vessel names. The number of communications received during the year was 44,922.

The letters and telegrams despatched are copied in letter press books and indexed. The number of letters despatched during the year was 33,000. The increase in the numbers of letters received and despatched during the last ten years shows the growth of the work of the department and consequent increase of staff, as a whole, including the records branch. An establishment book is maintained in this branch in which the names of all employees of the department are recorded.

The letters received in 1901 numbered 18,741 and despatched 13,000, while in the past year 44,922 were received and 33,000 despatched.

There has been a slight falling off in the number of letters received in the department during the past year, due to the transfer of several branches to the Naval Service Department.

## INSPECTION OF LIVE STOCK SHIPMENTS.

The inspectors of live stock shipments have reported regularly and furnished a statement of cattle, sheep, horses, hay and grain shipped to the United Kingdom from the ports of Montreal and St. John. N.B.

It will be seen that the total number of cattle and sheep shipped was less than last year and much less than previous years, going as far back as 1902-3.

The shipments from Montreal were as follows: Cattle, 72,555; sheep, 248, and 497 horses.

The shipments from St. John, N.B., were 3,301 cattle, 2,508 sheep, 19 horses.

The statement of live stock shipments forms an appendix to this report.

## STEAMBOAT INSPECTION.

All passenger steamboats over five tons gross are tonnage are subject to inspection yearly of boilers, machinery, hulls and equipment according to the rules of steamboat inspection.

Every freight steamer of more than one hundred and fifty tons gross is subject to inspection yearly, according to the rules of steamboat inspection for boilers, machinery and hulls.

Freight steamers, tug boats and steamers used for fishing purposes, under one hundred and fifty tons and more than five tons gross tonnage, are subject to inspection of boilers and machinery, according to the rules of steamboat inspection.

At present there is no fee charged for inspection except upon steamers registered elsewhere than in Canada when engaged in carrying passengers between Canadian ports and not holding a British Board of Trade certificate. The fee is then, in Canada, eight cents on the gross tonnage of such foreign steamer.

Canadian registered vessels inspected during the fiscal year numbered 1,812; gross tonnage, 466,799. Vessels inspected, but not registered in the Dominion, numbered 159; gross tonnage, 213,830 tons. The amount of fees collected for inspection was \$3,944.70.

The total expenditure in connection with inspection amounted to \$42,818.47, but part of this expenditure was for inspection of Dominion steamers and fog-alarms. The report of the chairman of steamboat inspection forms an appendix to this report.

## STEAMBOAT INSPECTORS.

|                                |                   |
|--------------------------------|-------------------|
| Edward Adams, Chairman.. . . . | Ottawa, Ont.      |
| J. A. Thomson.. . . .          | Victoria, B.C.    |
| H. G. Robinson.. . . .         | Vancouver, B.C.   |
| A. E. Hopper.. . . .           | Vancouver, B.C.   |
| W. J. Cullum.. . . .           | Victoria, B.C.    |
| G. P. Phillips.. . . .         | Kenora, Ont.      |
| J. Dodds.. . . .               | Toronto, Ont.     |
| J. B. Stewart.. . . .          | Toronto, Ont.     |
| E. W. McKean.. . . .           | Collingwood, Ont. |

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|                        |                |
|------------------------|----------------|
| T. P. Thompson.. . . . | Kingston, Ont. |
| W. Laurie.. . . .      | Montreal, Que. |
| L. Arpin.. . . .       | Montreal, Que. |
| F. X. Hamelin.. . . .  | Sorel, Que.    |
| N. A. Currie.. . . .   | Halifax, N.S.  |
| C. E. Dalton.. . . .   | St. John, N.B. |
| J. H. Fontaine.. . . . | Quebec, Que.   |

## HULL INSPECTORS.

|                        |                   |
|------------------------|-------------------|
| J. C. Kinghorn.. . . . | Victoria, B.C.    |
| W. Evans.. . . .       | Toronto, Ont.     |
| M. R. Davis.. . . .    | Kingston, Ont.    |
| P. Duclos.. . . .      | Quebec, Que.      |
| C. W. Seely.. . . .    | Halifax, N.S.     |
| I. J. Olive.. . . .    | St. John, N.B.    |
| S. D. Andrews.. . . .  | Collingwood, Ont. |

## WORKSHOPS.

Workshops are maintained by the department at Sorel, Halifax, Quebec, Prescott, and Parry Sound. The workshops at Sorel are of course the most important as construction of vessels is carried on at the shipyard as well as the making of repairs to vessels. Several separate buildings have from time to time been erected for the proper division and performance of the work. The buildings consist mainly of the office, draughting room and general store, boiler shop, machine shop and power house for electric plant, blacksmith shop, joiner shop, boat building and general woodwork shop, sawmill including planing machine and moulding machinery, pattern shop and vessel moulds and sail loft, tinsmith shop, building for storing vessel's equipment and stables. In addition, there is a fire equipment, a narrow gauge railway with sheds, also a railway track from the Sorel railway station for freight cars.

At the Dominion lighthouse depot, Prescott, the shops are mostly within the main building. It contains the main office, draughting room, photometric room where tests are made of lighthouse apparatus, carpenter shop, pattern shop, blacksmith shop, vapour lamp and erecting department, paint shop, shipping department and general store. The machine shop and acetylene department are each in separate buildings. The number of workshops at Quebec is seven, viz., the boiler shop and forge, machine shop, tinsmith and plumber shop, carpenter and boat shop, joiner shop, paint shop and sail loft. Sixteen vessels wintered in Louise basin. These were overhauled and repaired during the winter and all buoys requiring repairs were attended to and painted.

At Halifax, the workshops are connected with the dockyard and are mainly a blacksmith shop, carpenter and boat shop, machine shop, paint shop and tinsmith shop. Extensive repairs are made to buoys and moorings and repairs to the machinery of the Dominion steamers.



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At Parry Sound, the depot is mainly used for storing acetylene, gas buoys and lighthouse tanks and charging them with acetylene. The buoys and tanks are painted and prepared for placing in the spring; a few mechanics are consequently employed at this depot.

### SABLE ISLAND HUMANE INSTITUTION.

The report of the Superintendent of Sable Island Humane Institution was made to the agent of the department at Halifax and forwarded to the department.

The report is brief and contains, practically, information of the same nature as the report of 1909.

Sable Island has for many years had the reputation of being one of the most dangerous places in the north Atlantic for approaching vessels, but in recent years no wrecks have occurred in the immediate vicinity of the island until the past year when the Norwegian steamship *Heundal* struck on the south side, four miles east of No. 1 station and became a total wreck, the crew was saved.

The practice of patrolling the island was kept up during the year of 1910. Repairs were made to buildings in order to maintain the humane institution in a proper and serviceable state.

Owing to the season being wet all kinds of agricultural products yielded well, particularly potatoes, hay and pasturage were good.

At the close of the season, the live stock on the island consisted of 65 head of cattle, 30 trained horses, 1 imported stallion and 4 imported mares, 200 wild ponies and 6 hogs. The shipments from the island were 36 wild ponies, 116 barrels of cranberries and some hides.

The population consists of the superintendent, keepers of light stations, Marconi wireless stations, boatmen at the lifesaving stations and their families, numbering in all, 38.

The report of the superintendent forms an appendix to this report.

### SIGNAL SERVICE.

The signal service of Canada as it is now established was carried on in 1910 as usual. The superintendent of the signal service at Quebec has under his supervision a number of stations in the Gulf and River St. Lawrence and Strait of Belle Isle. From these stations daily reports are received concerning the weather and movements of vessels. Ice conditions are also noted and reported in the season, when moving ice forms a danger to navigation. Bulletins were issued at Quebec to vessel owners, agents and others interested in shipping, and telephoned to the Board of Trade, Montreal Shipping Federation and others. The quarantine station at Grosse Isle and the pilot station at Father Point, were daily informed of the movements of inward bound vessels.

The telephone service in connection with signal service extends from Montreal to Quebec, over a rented line and from Quebec to Crane island over the public service line. It has proven of great value to the dredging fleet and to pilots, who are kept informed of movements of vessels, doing away with the former uncertainty of the whereabouts of vessels and preventing delays to both vessels and pilots.

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Wireless telegraph messages were sent and received from the different wireless stations relating to weather conditions and movements of steamers.

The signal service includes the signalling of vessels passing certain points where signal officers are stationed. At the Halifax citadel the number of vessels of different kinds signalled was 1,399, and the superintendent has furnished a classified report of the vessels, principally steamers. Reports have also been received from the signal officers at Cape Race, Newfoundland, and in Nova Scotia from St. Pauls island, and Westport, Brier island. These reports contain information respecting the kind of service rendered in some cases, and in others, details of signal made of a certain vessel named. In New Brunswick, the light-keeper on Partridge island signals vessels bound for St. John and on the north side of the province signal stations exist at Point Lepreaux, Escuminac and Chatham, the last place is in the Miramichi river.

The reports received by the department on the signal service will be found in an appendix of this report.

## LIFE-SAVING SERVICE.

The life-saving service of the department, in the past, has included a number of stations supplied with life-saving apparatus, considered sufficient to render ordinary assistance to vessels ashore or needing help, when in distress, along our shores. The boats are principally Beebe-McClellan self-bailing surf boats and in a few instances Dobbins self-righting and self-bailing boats. But the latter were found to be too heavy for the number of men generally available for volunteer crews, who are only paid for annual drills and when assistance is rendered. The Beebe-McClellan surf boats have in late years been supplied the stations.

|  |     |
|--|-----|
| Total number of stations maintained is.. . . . | 37  |
| Total number of boats is.. . . .               | 35  |
| Total number of crews is.. . . .               | 225 |

## LEGISLATION.

The following Acts were passed and assented to during the Third Session, Eleventh Parliament, 1-2 George V., viz.:—

An Act to amend and consolidate the Acts relating to the Harbour of Toronto.

An Act to amend the Water-Carriage of Goods.

A. JOHNSTON.

*Deputy Minister of Marine and Fisheries.*

## APPENDIX No. 1.

ANNUAL REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT  
OF MARINE AND FISHERIES.

The Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the following report of the work done in the several services under the supervision of this office during the twelve months ended March 31, 1911.

This embraces work done at departmental headquarters on the construction of lighthouses, lightships and fog-alarms, the supervision of construction and repairs of lifeboats; the administration of the vote for the removal of wrecks and obstructions in navigable waters; tidal and current surveys; and the publication, examination and correction of hydrographic charts; construction of and repairs to fish hatcheries and refrigerators; engineering points in connection with the construction and maintenance of fish-passes; supervision of surveys of oyster beds; examination of applications for foreshore, wharf and other water lots as they affect the interests of navigation; preparation and publication of notices to mariners and hydrographic notes, &c.

Since the issue of the last report the Tidal and Current Survey work under the supervision of Dr. W. Bell Dawson, has been transferred to the Department of Naval Affairs.

As the work was done in close connection with my branch, I wish to say a word of praise of Dr. Dawson, and the great work he accomplished under this department in systematizing his survey work and obtaining as quickly as possible results of immediate benefit to mariners. I am certain that his work will bear comparison with the best work done in any country, and that, thanks to him, Canada has reason to be proud of the accuracy, both theoretical and practical, of her tidal and current work.

## STAFF.

The following changes have been made during the year in the staff of my office:—

Mr. L. E. Côté, appointed chief draughtsman of the department on April 1, 1909, took charge only after the work he was engaged in the Commissioner of Lights' Branch was put in such condition that it could be left and consequently began his duties in my branch during the present fiscal year.

Mr. F. P. Jennings, assistant engineer, has been sent to Prince Rupert, to superintend the construction of a wharf and departmental depot at that place, and has been on the ground since February 27, 1911.

Mr. A. Fortey, formerly employed in my office has been appointed temporarily to act as resident engineer for the Ontario district, and is now in charge of construction work on the upper lakes.

Mr. F. J. Maguire, formerly stenographer in my office, has been transferred to the Montreal agency of the department for similar work.

Mr. E. J. Wight was appointed draughtsman on February 14, 1911, at a salary of \$800 per annum.

Mr. W. H. Carson was appointed an assistant engineer on July 2, 1910, at a salary of \$1,200 per annum.

Mr. G. W. York was appointed a messenger in the draughting room on August 9, 1910, at a salary of \$500 per annum.



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Miss Mary Edwards, stenographer, left the service on April 1, 1910, and was replaced by Miss Mabel McBratney, who has been appointed permanently at a salary of \$500 per annum.

Miss M. E. Thoburn was appointed a stenographer December 16, 1910, at a salary of \$500 per annum.

## PERSONAL INSPECTIONS.

I have been able to make quite a number of personal inspections during the past year, the most important being as follows:—

On the opening of navigation in 1910, I visited Lake Erie, inspecting all the lights on the Canadian shore, continuing on to Lake Superior where inspections were made of sites for proposed lighthouses at Michipicoten island and Ile Parisienne. The new tower on Caribou island was also inspected.

On May 13, the coast between the Restigouche river and Chatham was inspected, the Charlottetown agency visited, and various points on the Quebec coast of the St. Lawrence river touched while returning.

The whole of July, with portions of June and August, was spent in British Columbia where extended examinations were made of points suggested for proposed aids to navigation, and various other matters attended to which had accumulated since my previous visit.

On August 29, the whole coast of the Bay of Fundy was inspected and the agencies at Halifax and Charlottetown visited.

On October 7, the Ottawa river was visited and a week spent in locating ranges and buoys in connection with new channels being laid out.

In December, the Detroit river was visited in connection with important changes in the system of lighting and buoying.

In January, important matters in the Winnipeg district were taken up and throughout the year a number of short trips were taken to various points, principally involving the location of new aids and routine business required in connection with departmental duties.

## WEST COAST TRAILS.

The work on the West Coast Trail was continued during the season of 1910, and a temporary life-saving station was established at the head of Pachena bay for the winter season of 1910-11. Arrangements were made for utilizing the service of the life-saving crew in the upkeep of the trail during the winter. The work was pushed on to Shelter Bight and the trail can now be used to carry life-saving apparatus to many points on the coast including the spot where the *Valentia* was wrecked. The work was carried out under the personal supervision of Mr. H. C. Killeen, the resident engineer of the department at Victoria, B.C.

## OFFICE WORK.

A large proportion of the work done by the general staff of the branch consists in the construction, repair or improvement of light buildings, fog-alarms, beacons and other aids to navigation. Full details of the work done in this connection during the past twelve months are contained in a separate report which is attached hereto. (Inclosure A.)

Plans and specifications for all important new buildings and repairs, new vessels, &c., are made or approved in this office.

The following table indicates the work done in the draughting office during the twelve months ended March 31, 1911:—

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| Description of Work.                          | Plans<br>Designed. | Plans<br>Received. | Copies<br>Made. |
|---|--------------------|--------------------|-----------------|
| Lighthouse towers and dwellings.....          | 46                 | 7                  | 230             |
| Fog alarm buildings .....                     | 5                  | 3                  | 26              |
| Details .....                                 | 95                 | 32                 | 300             |
| Wharfs, piers, &c. ....                       | 4                  | 2                  | 11              |
| Outbuildings.....                             | 15                 | 2                  | 72              |
| Machinery.....                                | .....              | 1                  | 2               |
| Lanterns und illum nating apparatus.....      | 3                  | 10                 | 23              |
| Buoys and apparatus.....                      | .....              | .....              | 59              |
| Day beacons.....                              | 5                  | 1                  | 19              |
| Steamers.....                                 | .....              | 1                  | 7               |
| Land surveys .....                            | 5                  | 118                | 140             |
| Plans relating to water lot applications..... | .....              | 260                | 17              |
| Miscellaneous.. ..                            | 27                 | 303                | 413             |
|   | 205                | 740                | 1,319           |

|   |       |
|---|-------|
| Total plans for twelve months from April 1, 1910, to March 31, 1911. .... | 2,264 |
| Charts received and recorded.....   | 216   |
| Charts received and entered in chart books.....                           | 26    |
| Photographs received and recorded.....                                    | 200   |
| Specifications written.....   | 41    |
| Notices to mariners issued (comprising 348 subjects).....                 | 132   |

## PUBLICATIONS.

The work of preparing and issuing notices to mariners continues to be heavy and urgent; during the past twelve months 132 notices, covering 348 subjects, have been published. Amongst important notices, involving considerable labour in compilation, and representing useful work done in the department, are:—

(1) A complete list and renumbering of buoys in Collingwood harbour and Parry Sound, Ontario.

(2) Results of two years' tidal observations on Pacific coast.

(3) Complete list of buoys from Point Pelee to head of Fighting island, Detroit river, Ontario.

During the past twelve months notices relating to waters outside of Canada were issued, covering 12 items relating to Newfoundland and Labrador, 3 items relating to the Atlantic, 14 to the inland, and 11 to the Pacific waters of the United States, as well as 3 notices referring to transatlantic subjects. No attempt is made to issue a complete synopsis of British or foreign notices, but merely to republish items likely to be of immediate interest to Canadian vessels, or to vessels leaving Canadian ports, for the more important or frequented foreign ports.

## CLASSIFICATION OF LIGHTKEEPERS' SALARIES.

Every light and fog alarm station in the Dominion was, on April 1, 1908, brought under the operation of a schedule classification, full details of which were given in my report for 1909-10. As already stated in that report, the results have been most gratifying, giving employees an assurance of stability which they did not previously possess, and relieving the department from constant demands for increases of salary.

## REMOVAL OF OBSTRUCTIONS.

During the past twelve months the following work has been done, under the annual appropriation for the removal of wrecks and obstructions:—

(1) The schooner *Ariel* and a scow, which sank in the harbour of Owen Sound, Ontario, were removed by the Georgian Bay Shipbuilding & Wrecking Co., Ltd., of Midland, Ont., the contract price being \$2,100.

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(2) The steamer *Canada*, which sank in the harbour of Colpoj bay, Ontario, was removed by the Lemcke Tug Co., Ltd., of Lions Head, Ont., the contract price being \$350.

(3) The tug *Lulu Rae*, which sank at the entrance to the Kaministikwia river, Fort William, Ontario, was removed by the Stevedore Co., Ltd., of Fort William, Ont., the contract price being \$600.

## HYDROGRAPHIC WORK.

The hydrographic surveys previously under the control of this department, in charge of Mr. W. J. Stewart, are now administered by the Naval Department.

As, however, most of the information contained in the Canadian notices to mariners relates to work done in this department it has not been thought desirable to transfer their preparation. Therefore any hydrographic notes reaching the department are prepared for publication in this office, and embodied in notices to mariners.

In preparing these, special attention has been paid to publishing all information obtainable respecting the hydrography of Canada, and the fullest possible sailing directions have been appended to all descriptions of aids to navigation so as to increase the value of the notices.

The usual annual edition of the list of lights and fog-alarms in the Dominion, corrected up to April 1, 1910, was issued during the summer, the reprints of the portions relating to the Great Lakes and British Columbia bound separately for the use of mariners in those waters. This has now become so bulky that it ought to be permanently divided into three portions, and printed only in that form.

In last year's report I again drew attention to the fact that no adequate lists of buoys in the eastern waters of Canada were published, and I now repeat my assertion that in the interests of safe navigation, complete lists of buoys, beacons and day marks should be prepared and published, and kept up to date by annual revisions.

I regret that the pressure of other duties prevents me from extending this useful work to cover all Canadian waters, and that with our existing staffs the work cannot be overtaken.

## ICE-BREAKING.

Two contracts were entered into, during the present season, for ice-breaking in Thunder bay and vicinity:—

(1) The Canadian Towing and Wrecking Company, Limited, of Port Arthur, contracted with the department to keep the harbours of Port Arthur, Fort William and West Fort William open for navigation until December 17, 1910, and to open those harbours in the spring of 1911 in time to admit upward bound vessels to enter the harbours as soon as the Sault Ste. Marie canal should be open for navigation. The contract price was \$30,000, which included an agreement to remove all light-keepers in the vicinity from their stations at the close of navigation in 1910.

(2) A contract was entered into with the Midland Towing and Wrecking Company, Limited, of Midland, to keep the harbours of Midland, Tiffin and Victoria and the approaches thereto free from ice, from open water in the Georgian bay, until the close of navigation of 1910, for \$5,500.

In both of the above cases the work was satisfactorily done, under the supervision of the harbour masters of the respective ports.

Respectfully submitted,

WM. P. ANDERSON, M. INST. C.E.,  
Chief Engineer.

CHIEF ENGINEER'S OFFICE,  
Department of Marine and Fisheries,  
Ottawa, Canada, April 1, 1911.



(INCLOSURE A.)

DETAILED REPORT OF THE CHIEF ENGINEER OF THE DEPARTMENT OF MARINE AND FISHERIES ON CONSTRUCTION, ESTABLISHMENT AND IMPROVEMENT OF LIGHTHOUSES AND OTHER AIDS TO NAVIGATION, UP TO MARCH 31, 1911.

To the Deputy Minister,  
Department of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit a detailed report on work done in the construction and establishment of aids to navigation, for the twelve months ending March 31, 1911.

NOVA SCOTIA.

NEW AIDS TO NAVIGATION.

| Lightstation.    | Nature of the work.  | How performed.   | Contractor or foreman. | Expenditure during fiscal year. |
|------------------|--|------------------|------------------------|---------------------------------|
|                  |  |                  |                        | \$ . cts.                       |
| Caribou channel. | Establishment of two pairs of range beacons.....   | Day's labour.... | G. Y. Grant.....       | 28 30                           |
| Freels, cape.... | Completion of the erection of a wooden fog alarm building, dwelling house and outbuildings; and the installation of a 3-inch duplicate diaphone plant.<br>(The above work was started in 1909-10: see Annual Report for that year.)..... | " ....           | J. L. Colter .....     | 5,643 04                        |

CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                  |  |                                       |                                      |          |
|------------------|--|---------------------------------------|--------------------------------------|----------|
| Arichat.....     | Changes to lantern deck.....   | Day's labour....                      | S. Samson.....                       | 250 13   |
| Cross island.... | (1) Provision of the machinery for a 3-inch duplicate diaphone plant, with 12-H.P. engines..   | Furnished under general contract..... | Can. Fog Signal Co., Toronto, Ont... | 4,700 00 |
|                  | (2) Erection of a wooden fog alarm building.....   | Contract.....                         | Jas. W. Smith, Lunenburg, N.S.       | 1,945 00 |
|                  | (3) Additions to fog alarm building.....   | Day's labour....                      | E. G. Geizer.. }                     | 676 61   |
|                  | (4) Installing above machinery.  | " ....                                | R. Summers.. }                       | 189 88   |
| Canso .....      | New wooden lantern deck.....   | " ....                                | G. Y. Grant.. }                      | 370 38   |
| Harbour island.. | Lighthouse tower repairs.....  | " ....                                | S. C. McMillan. ....                 |          |
| North, cape. ... | (1) Erection of a new reinforced steel concrete tower. (The old Cape Race tower was taken down in sections, and shipped to the site.).....<br>(The above work was started in 1909-10; see Annual Report for that year.)..... | " ....                                | G. Y. Grant.....                     | 1,718 21 |
|                  | (2) Installation of heating coils in fog alarm engine room.....  | " ....                                |                                      |          |
| Pomquet island.. | Light house tower repairs.....   | " ....                                | G. Y. Grant.....                     | 148 58   |
| Parrsboro.....   | Protection work repairs .....  | " ....                                | G. Y. Grant.....                     | 141 68   |

## SESSIONAL PAPER No. 21

## NOVA SCOTIA—Continued.

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS—Continued.

| Lightstation.     | Nature of the work.  | How performed.   | Contractor or foreman. | Expenditure during fiscal year. |
|-------------------|--|------------------|------------------------|---------------------------------|
|                   |  |                  |                        | \$ cts.                         |
| Race, cape . . .  | Coal shed repairs.....   | Day's labour.... | A. W. Faulkner.....    | 601 43                          |
| Sable, cape.....  | Erection of a new wooden double dwelling house for light-keeper; also a wooden coal shed ..... | " .....          | E. Geizer.....         | 2,986 63                        |
| Sharp, cape.....  | Dwelling house repairs.....  | " .....          | G. Y. Grant . . . . .  | 1,111 87                        |
| St. Paul island.. | Installation of the new 3-inch diaphone plant, purchased in 1909-10 .....                      | " .....          | T. Phillips.....       | 1 271 46                        |
| Wedge island...   | Protection work repairs .....  | " .....          | J. Mills.....          | 1,976 69                        |

## NEW BRUNSWICK.

## NEW AIDS TO NAVIGATION.

|                  |  |                                       |  |        |
|------------------|--|---------------------------------------|--|--------|
| Glenwood.....    | Establishment of a 20-foot pole, hoisting a Chance anchor lens lantern, on Belyea wharf, St. John River.....                   | Day's labour....                      | H. B. Belyea.....                            | 74 86  |
| Pompey Ledge..   | Erection of a concrete beacon, 11 feet high, surmounted by a pyramid of open steel framework.....                              | " .....                               | J. Cadwallader.....                          | 591 64 |
| Sheldrake island | Provision of the material for a steel skeleton lighthouse tower.....<br>(The tower will be erected during the season 1911-12). | Furnished under general contract..... | Goold, Shapley and Muir, Brantford, Ont..... | 377 85 |

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                   |   |                  |   |          |
|-------------------|---|------------------|---|----------|
| Buctouche bar..   | Protection work repairs.....  | Day's labour.... | H. Gallant. ....                        | 402 41   |
| Dalhousie wharf.  | Placing steel framework under the tower, to increase the height.....  | " .....          | P. B. Troy.....                         | 418 28   |
| Enrage, cape....  | Fog alarm repairs.....  | " .....          | T. Phillips.....                        | 1,083 67 |
| Escuminac.....    | (1) New wooden lightkeeper's dwelling and boathouse....   | Contract. ....   | Edward Rourke, St. John West, N.B. .... | 1,975 00 |
|                   | (2) Sinking a well .....  | " .....          | T. Vontour, Escuminac..                 | 60 00    |
| Gull cove.....    | Erection of a wooden lighthouse tower, 49 feet high, which replaces the pole light hitherto exhibited here..... | " .....          | Edward Rourke, St. John                 | 1,220 00 |
| Grindstone isd..  | Fresh water supply for fog alarm boilers.....   | Day's labour.... | R. Summers.....                         | 203 32   |
| Harper point..    | Erection of a small enclosed wooden lighthouse tower, on a cribwork block.....                                  | " .....          | P. Roy.....                             | 802 82   |
| Jourimain, cape.  | Moving lighthouse tower to a new site.....  | " .....          | B. W. Allen. ....                       | 300 53   |
| McFarlane pt..    | Construction of a wooden plank walk approach to lighthouse..  | " .....          | A. McFarlane.....                       | 109 91   |
| Partridge island. | Repairs to coal shed.....   | " .....          | H. Andrews.....                         | 873 72   |

2 GEORGE V., A. 1912

NEW BRUNSWICK—*Continued.*CHANGES AND IMPROVEMENTS IN EXISTING AIDS—*Continued.*

| Lightstation.    | Nature of the work.   | How performed.   | Contractor or foreman.             | Expenditure during fiscal year. |
|------------------|---|------------------|------------------------------------|---------------------------------|
|                  |   |                  |                                    | \$ cts.                         |
| St. Martins...   | Erection of a 22-foot wooden lighthouse tower, on the eastern breakwater..... | Contract.....    | L. Mury, West Arichat, N.B. ....   | 650 00                          |
| Richibucto.....  | Moving the bar pole range lights to new sites; also small repairs.....        | Day's labour. .. | Jas. Legoof .....                  | 66 50                           |
| Sapin, point.... | Erection of a 27-foot wooden lighthouse tower.....                            | Contract.....    | Jas. Legoof, Richibucto, N.B. .... | 448 00                          |
| Shippigan .....  | Moving back range lightmast to a new site.....                                | Day's labour.... | W. C. Trudel .....                 | 128 53                          |
| St. John.....    | Repairs to the beacon .....   | " .....          | Jas. E. Kane.....                  | 1,488 18                        |
| Tiner point....  | Reservoir repairs.....  | " .....          | A. Splane.....                     | 234 38                          |

## PRINCE EDWARD ISLAND.

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                 |   |                  |                                      |          |
|-----------------|---|------------------|--------------------------------------|----------|
| Charlottetown.. | Repairs to the marine wharf....   | Day's labour.... | G. L. Gaudin.....                    | 2,487 45 |
| East point..... | Lighthouse tower repairs; also repairs to the lightkeeper's dwelling house..... | " .....          | M. J. Walsh.....                     | 270 79   |
| Grand Tracadie. | Moving pole lights to new positions.....  | " .....          | M. J. Walsh.....                     | 50 00    |
| New London...   | Building a new block foundation for the front beacon light....                  | Contract.....    | H. McLeod, French river, P.E.I. .... | 151 50   |

## QUEBEC.

## NEW AIDS TO NAVIGATION.

|                   |   |                                       |   |           |
|-------------------|---|---------------------------------------|---|-----------|
| Bagot bluff. .... | (1) Provision of the machinery for a 3-inch duplicate diaphone plant, driven by two 12-H. P. engines.....     | Furnished under general contract..... | Can. Fog Signal Co., Toronto, Ont. ....     | 6,500 00  |
|                   | (2) Erection of a wooden fog alarm building.....  | Day's labour..                        | T. Thibaudeau.....                          | 13,723 00 |
|                   | (3) Erection of a wooden double dwelling for the fog alarm engineer.....                                      |                                       |   |           |
|                   | (This work will be completed during the season 1911-12)....   |                                       |   |           |
| Basse point. .... | (1) Provision of the material for the construction of a steel column base, to support a lighthouse tower..... | Furnished under general contract..... | Goold, Shapley & Muir, Brantford, Ont. .... | 298 00    |
|                   | (2) Construction of the above base; will be erected during season 1911-12.....                                | Day's labour....                      | Quebec workshops.....                       | 283 63    |



## SESSIONAL PAPER No. 21

## QUEBEC—Continued.

## AIDS TO NAVIGATION—Continued.

| Lightstation.     | Nature of the work.  | How performed.                        | Contractor or foreman.                      | Expenditure during fiscal year. |
|-------------------|--|---------------------------------------|---|---------------------------------|
|                   |  |                                       |   | \$ cts.                         |
| Est, cap à l'.... | Erection of 33-foot reinforced concrete lighthouse tower....   | Day's labour....                      | H. de Haan.....                             | 1,537 89                        |
| Grand Pabos....   | Erection of a mast light and shed on the wharf.....  | Contract.....                         | F. Molloy, Grand Pabos, P. Q. ....          | 112 00                          |
| Gaspé Basin....   | Erection of two wooden light-house towers on cribwork piers.....   | " .....                               | Arthur Morin, Gaspé, P. Q.....              | 3,255 00                        |
| Grand Entry. . .  | (1) Construction of a cribwork pier for a pole light.....  | " .....                               | George J. Murray, Pic-tou, N.S.....         | 704 00                          |
|                   | (2) Erection of a 30-foot pole light on the above cribwork pier.....   | Day's labour....                      | T. Thibaudeau ...                           | 68 36                           |
| Mai, Ile de. .... | Erection of a 22-foot wooden lighthouse tower.....   | " .....                               | " .....                                     | 598 68                          |
| Moisie river .... | Establishment of two sets of range beacons at the mouth of the Moisie river.....                               | Contract.....                         | J. Perreault, Moisie, P.Q.                  | 177 65                          |
| St. Omer.....     | (1) Provision of the material for the construction of a steel column base, to support a light-house tower..... | Furnished under general contract..... | Goold, Shapley & Muir, Brantford, Ont. .... | 298 00                          |
|                   | (2) Construction of the above base.....  | Day's labour....                      | Quebec workshops.....                       | 263 86                          |

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                             |  |                                       |  |          |
|-----------------------------|--|---------------------------------------|--|----------|
| Amherst island.             | (1) Provision of the material for the construction of a steel column base, to support a wooden lighthouse tower. . . | Furnished under general contract..... | Goold, Shapley & Muir, Brantford, Ont..... | 298 00   |
|                             | (Will be erected during the season 1911-12)  | Day's labour....                      | T. M. Wyatt.....                           | 755 45   |
| Amour, point...             | Tower repairs.....   | " .....                               | J. Blanchette.....                         | 290 09   |
| Anguille, cape...           | Construction of an engine room annex to the fog alarm building.....  | " .....                               | J. Blanchette.....                         | 1,843 00 |
| Bauld, cape....             | Repairs to the dam; also repairs to the boathouse.....   | " .....                               | J. A. Smith .....                          | 3,583 33 |
| Belle Isle (N.E. end).....  | (1) Construction of a concrete wharf, for landing supplies, &c.....  | " .....                               | " .....                                    |          |
|                             | (2) Installing a derrick and flag mast on the wharf.....   | " .....                               | " .....                                    |          |
| Belle Isle (S. W. end)..... | (1) Construction of a concrete wharf, for landing supplies, &c .....   | " .....                               | D. Bilodeau and A. Ouimet.....             | 6,429 86 |
|                             | (2) Construction of a new dam, for supplying water for fog alarm machinery.....                                      | " .....                               | " .....                                    |          |
|                             | (3) Installing new fog alarm machinery.....  | " .....                               | " .....                                    |          |
|                             | (4) Building a new wooden shed.....  | " .....                               | " .....                                    |          |

2 GEORGE V., A. 1912

## QUEBEC—Continued.

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS—Continued.

| Lightstation.                       | Nature of the work.   | How performed.   | Contractor or foreman.                      | Expenditure during fiscal year. |
|-------------------------------------|---|------------------|---|---------------------------------|
|                                     |   |                  |   | \$ cts.                         |
| Carleton wharf.                     | Provision of a Scotch derrick...  | Day's labour...  | General Supply Co. of Canada, Ottawa, Ont.. | 220 00                          |
| Entry isd. ....<br>(Magdalen isds.) | Removal of the iron lantern from the old lighthouse tower to a new site; and the placing of it on a concrete base. .... | "                | F. Parent.....                              | 245 81                          |
| Egg island.....                     | Repairing framework of tower, and reshingling.....  | "                | J. Blanchette.....                          | 1,925 76                        |
| Godbout.....                        | Repairs to pole lights.....   | "                | N. A. Comeau.....                           | 37 62                           |
| Heath point....                     | Construction of a new oil shed; also repairs to lighthouse tower, &c.....   | "                | H. de Haan.....                             | 1,309 62                        |
| Hospital rock...                    | Building a new oil shed.....  | "                | T. Thibaudeau.....                          | 133 87                          |
| Kamouraska...                       | Levelling up lighthouse site....  | "                | A. Levesque.....                            | 130 00                          |
| Monts, pt. des.                     | Construction of a new wooden dwelling house for the light-keeper.....   | Contract...      | L. Bouchard, Portneuf, P. Q.....            | 3,250 00                        |
| Martin River...                     | Building a fence around the lighthouse property .....   | "                | A. Leclerc, Martin Riv..                    | 61 85                           |
| Norman, cape...                     | (1) Alterations to the fog alarm machinery.....<br>(2) Tower repairs .....  | Day's labour.... | J. Blanchette.....                          | 4,880 85                        |
|                                     | (3) Constructing a wooden sidewalk between the tower and the fog alarm building.)                                       |                  |   |                                 |
| Natashkwan....                      | Erection of an oil and shelter shed.....  | "                | H. Carbonneau .....                         | 143 73                          |
| Prince shoal<br>lightship.....      | Installation of the fog alarm machinery, purchased in 1909-10, for this lightship.....                                  | "                | J. L. Richard.....                          | 681 29                          |
| Portneuf-en-bas.                    | (1) Construction of a wooden dwelling house for the light-keeper .....  | Contract.....    | L. Bouchard, Portneuf-en-bas, P.Q. ....     | 1,650 00                        |
|                                     | (2) Erection of a 3-section steel skeleton tower. (In course of construction).....                                      | Day's labour.... | E. Tremblay .....                           | 178 68                          |
| St. Pancras...                      | Erection of a boathouse; also small repairs.....  | "                | T. Thibaudeau.....                          | 390 50                          |
| Salmon, cape ...                    | Repairs to the lighthouse tower and fog alarm building.....   | "                | V. Talbot .....                             | 1,684 23                        |
| Ste. Famille ...                    | Repairs to the back lighthouse tower .....  | "                | O. Tremblay.....                            | 121 91                          |
| Ste. Pierre, I. O.                  | Completion of the erection of a 3-section steel skeleton light-house tower, began in 1910-11.                           | "                | O. Tremblay.....                            | 301 87                          |
| Traverse, upper.                    | Extensive repairs to the concrete pier.....   | "                | A. Perron .....                             | 6,276 61                        |

## SESSIONAL PAPER No. 21

## MONTREAL.

## NEW AIDS TO NAVIGATION.

| Lightstation.     | Nature of the work.  | How performed.                         | Contractor or foreman.                      | Expenditure during fiscal year. |
|-------------------|--|--|---|---------------------------------|
|                   |  |  |   | \$ cts.                         |
| Richelieu river.. | The establishment of several ranges of lighted beacons and pole lights in the river, between Sorel and St. Mark.....   | Day's labour....                       | P. Beauchemin .....                         | 1,250 06                        |
| St. Lambert reef  | Erection of a wooden day beacon  | " .....                                | H. Bourguin.....                            | 13 39                           |
| Tetreauville .... | Provision of the material for the erection of a 4-section steel skeleton tower, for the back light of this new range, which will be erected during the season 1911-12..... | Furnished under general contract ..... | Goold, Shapley & Muir, Brantford, Ont. .... | 668 50                          |

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                   |   |                  |                        |          |
|-------------------|---|------------------|------------------------|----------|
| Chute à Blondeau  | Erection of a storehouse on the wharf .....   | Day's labour.... | Capt. J. D. Weir ..... | 158 58   |
| Grondines.....    | (1) Erection of a new square wooden lighthouse tower, 27 feet high, for the front range light .....   | " .....          | E. Tremblay.....       | 4,138 70 |
|                   | (2) Erection of a new 48 foot steel skeleton lighthouse tower, to carry the back range light, surmounted by an enclosed wooden watchroom. (The steel work of the old tower was utilized in the erection of the new one) ..... |                  |                        |          |
| Hochelaga.....    | The erection of two pole lights to serve as a range, and to replace the beacon lights hitherto in service here which were pulled down and demolished. ....  | " .....          | P. Beauchemin .....    | 683 31   |
| Lac, Pte du. . .  | (1) The erection of a dwelling for the lightkeeper on the front lighthouse pier.....  | " .....          | L. P. Filion.....      | 4,692 68 |
|                   | (2) The destruction of the wooden cribwork, and concrete work of the old pier, which formed an obstruction.....   |                  |                        |          |
| Marie, Ile. ....  | Repairs to the front pier. ....   | " .....          | Ed. Tremblay .....     | 2,187 78 |
| M. Tavish point.  | Erection of a 23-foot square wooden lighthouse tower to take the place of the pole light hitherto exhibited.....  | " .....          | M. J. Egan .....       | 749 89   |
| Port St. Francis. | Small repairs to front pier.....  | " .....          | Ed. Tremblay .....     | 34 30    |
| Ronde, Ile . . .  | Erection of a shelter shed for the lightkeeper. ....  | " .....          | Ed. Tremblay .....     | 455 05   |
| St. Peter, Lake.  | Construction of ice-breakers on the upper and lower piers; also repairs to the upper back lighthouse pier .....   | " .....          | Ed. Tremblay .....     | 4,593 81 |
| Vercheres .....   | Rip-rap protection work. ....   | " .....          | E. Tremblay.....       | 133 11   |
| Witch Shoal....   | Lighthouse tower repairs. ....  | " .....          | M. J. Egan .....       | 531 62   |



2 GEORGE V., A. 1912

## ONTARIO.

## NEW AIDS TO NAVIGATION.

| Lightstation.     | Nature of the work.   | How performed.                         | Contractor or foreman.                           | Expenditure during fiscal year. |
|-------------------|---|--|--|---------------------------------|
|                   |   |  |  | \$ cts.                         |
| Amherstburg....   | Purchase of site for departmental depot .....   |  | Pittsburg Coal Co., Cleveland, Ohio.....         | 3,000 00                        |
| Cobourg.....      | (1) Erection of a reinforced concrete gas beacon on the west pier .....   | Contract.....                          | Randolph, McDonald & Co., Toronto, Ont.....      | 3,000 00                        |
|                   | (2) Erection of a temporary wooden fog alarm building on the east pier. ....  | Day's labour...                        | T. H. Brewer.....                                | 436 84                          |
|                   | (3) Installing fog alarm machinery.....   | " .....                                | W. H. Roebuck .....                              |                                 |
|                   | (4) Provision of the machinery for a 1½-inch diaphone plant with 4-H.P. engine.....   | Furnished under general contract. .... | Can. Fog Signal Co., Toronto, Ont.....           | 1,431 00                        |
| Michipicoten Is.  | Construction of a 65-foot reinforced concrete tower, dwelling and outbuildings. (In course of construction. Will be completed during season 1911-12)..... | Day's labour...                        | T. H. Brewer.....                                | 3,928 00                        |
| Muskoka River.    | Erection of five tripod lights....  | " .....                                | Capt. F. Beaumont.....                           | 427 96                          |
| Onderdonk....     | Erection of a 20-foot square wooden lighthouse tower....  | " .....                                | T. H. Brewer .....                               | 477 19                          |
| Rideau river....  | Building and placing 47 buoys between at various points on the river.....   | Contract.....                          | D. Noonan, Kingston, Ont.....                    | 2,400 00                        |
| Sault Ste. Marie. | (1) Completion of the erection of range lighthouse towers began in 1909-10 .....  | Day's labour...                        | T. H. Brewer.....                                | 323 13                          |
|                   | (2) Provision of the material for the erection of the front range steel skeleton lighthouse tower general contract. ....                                  | Furnished under                        | Goold, Shapley & Muir, Brantford, Ont.....       | 377 85                          |
| Shaganash.....    | Erection of a square wooden dwelling, surmounted by a square wooden lantern....   | Day's labour...                        | M. J. Egan.....                                  | 2,484 90                        |
| Victoria harbour  | Erection of two square wooden lighthouse towers, surmounted by square wooden lanterns....   | " .....                                | G. Dobson, Victoria Harbour, Ont.                | 1,766 81                        |
| Waubauskene...    | (1) Erection of two sets of pole range lights, operated by electricity.....   | Contract.....                          | The Sheppard Lumber Co'y., Waubauskene, Ont..... | 787 82                          |
|                   | (2) Construction of 3 cribs to carry lights.....  | " .....                                | " .....  | 182 95                          |

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                   |  |                 |                   |          |
|-------------------|--|-----------------|-------------------|----------|
| Burlington beach  | Small repairs.....   | Day's labour... | T. Lundy.....     | 15 00    |
| Caribou island..  | Erection of an 80-foot reinforced concrete lighthouse tower....                    | " .....         | T. H. Brewer..... | 7,183 80 |
| Colchester reef.. | Extensive repairs to the concrete protection work around lighthouse tower, &c..... | " .....         | M. J. Egan.....   | 6,724 26 |

## SESSIONAL PAPER No. 21

## ONTARIO—Continued.

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS—Continued.

| Lightstation.              | Nature of the work.  | How performed.                   | Contractor or foreman.  | Expenditure during fiscal year. |
|----------------------------|--|----------------------------------|---|---------------------------------|
|                            |  |                                  |   | \$ cts.                         |
| Croker, Cape....           | Overhauling machinery of the fog alarm.....  | Day's labour....                 | W. H. Roebuck.....  | 721 84                          |
| Grosse point....           | Repairing the breakwater pier; also repairs to the lighthouse towers.....  | " .....                          | M. J. Egan.....   | 1,476 06                        |
| McKay island..             | Building new boathouse, and repairing lighthouse tower. ....   | Contract.....                    | Arch. Brechin, Bruce Mines, Ont.....                          | 121 95                          |
| Mississagi strait          | (1) Building new boathouse. (2) Purchase of new boiler tubes for the fog alarm boilers. (3) Installing the above boiler tubes.....   | Day's labour....                 | J. H. Ball.....   | 169 93                          |
| Niagara-on-Lake            | Erecting oil shed.....   | Day's labour....                 | John Inglis & Co., Toronto, Ont.....                          | 234 92                          |
| Presqu'île .....           | (1) Provision of an electric light plant for the fog alarm station. (2) Installing the above light... (1) Tower repairs..... (2) Provision of the machinery for a 1½-inch. diaphone plant, driven by two 6-h.p. engines. (3) Installing the above machinery..... | Contract.....                    | W. H. Roebuck.....  | 212 85                          |
| Point Porphyry.            | Machinery repairs.....   | Contract.....                    | T. H. Brewer.....   | 273 62                          |
| Port Colborne..            | " .....  | Day's labour....                 | Can. Fog Signal Co., Toronto, Ont.....                        | 295 50                          |
| Sulphur island..           | Cribwork protection work.....  | Day's labour....                 | W. B. Ainsworth.....  | 13 68                           |
| St. Anicet.....            | Repairs to the lighthouse tower; also protection work.....   | " .....                          | M. J. Egan.....   | 226 00                          |
| Thessalon. ....            | Building small boathouse .....   | Furnished under general contract | Can. Fog Signal Co., Toronto, Ont.....                        | 2,798 00                        |
| Warren's Land-<br>ing..... | Moving back light to a new site.   | Day's labour....                 | W. H. Roebuck..   | 725 69                          |
|                            |  | " .....                          | " .....   | 101 89                          |
|                            |  | " .....                          | " .....   | 331 73                          |
|                            |  | " .....                          | J. J. King... ..  | 50 00                           |
|                            |  | " .....                          | Geo. Brown, officer in charge Dominion Light house Depot..... | 1,075 22                        |
|                            |  | " .....                          | Jas. Harvey.....  | 75 00                           |
|                            |  | Contract.....                    | Wm. Dewar, Warren's Landing, Man.....                         | 275 00                          |

## BRITISH COLUMBIA.

## NEW AIDS TO NAVIGATION.

|                   |   |                 |   |          |
|-------------------|---|-----------------|---|----------|
| Bamfield islands  | Erection of a concrete beacon, 22 feet high. ....   | Contract.....   | Anderson & MacKinnon, Prince Rupert, B.C. ... | 1,460 00 |
| Denny island ...  | Erection of a wooden day beacon.  | Day's labour... | Crew of C.G.S. 'Quadra'                       |          |
| Estevan point...  | Completion of the erection of a 100-foot reinforced steel concrete lighthouse tower, stiffened with 8 flying buttresses. (This work was started during the season 1909-10)..... | " .....         | Luke Humber.....                              | 1,481 04 |
| Fairview point..  | Construction of a concrete beacon, 22 feet high.....  | Contract.....   | Anderson & MacKinnon, Prince Rupert, B.C....  | 1,175 00 |
| Herbert reefs. .. | Construction of a concrete beacon, 22 feet high.....  | " .....         | J. H. Pillsbury, Prince Rupert, B.C.....      | 1,400 00 |

BRITISH COLUMBIA—*Continued.*AIDS TO NAVIGATION—*Continued.*

| Lightstation.            | Nature of the work.  | How performed.        | Contractor or foreman.               | Expenditure during fiscal year. |      |
|--------------------------|--|-----------------------|--------------------------------------|---------------------------------|------|
|                          |  |                       |                                      | \$                              | cts. |
| Procter . . . . .        | (1) Establishment of two mast lights and shed. . . . .   | Contract. . . . .     | A. G. Gallup, Nanaimo, B. C. . . . . | 140                             | 00   |
|                          | (2) Erection of a small dwelling house for the lightkeeper. . . . .  | " . . . . .           | P. Jenson, Procter, B.C. . . . .     | 325                             | 00   |
| Patey rock. . . . .      | Erection of a concrete beacon, 13 feet high, carrying a 31-day Wigham lamp. . . . .  | Day's labour. . . . . | J. Davies . . . . .                  | 721                             | 78   |
| Ripple point. . . . .    | Erection of a cone-shaped wooden day beacon. . . . .   | " . . . . .           | Crew of C.G.S. 'Quadra' . . . . .    |                                 |      |
| Rock bay bluff. . . . .  | Erection of a cone-shaped wooden day beacon. . . . .   | " . . . . .           | " . . . . .                          |                                 |      |
| Somass river. . . . .    | Erection of a wooden 9-pile beacon, to carry a 31-day Wigham lamp. . . . .   | Contract. . . . .     | Geo. Forrest, Alberni, B. C. . . . . | 450                             | 00   |
| Second Narrows. . . . .  | Erection of two wooden 5-pile beacons, surmounted by lattice-work drums. . . . .   | Day's labour. . . . . | Capt. H. Cates. . . . .              | 319                             | 62   |
| Thurlow island. . . . .  | Erection of a cone-shaped wooden day beacon. . . . .   | " . . . . .           | Crew of C.G.S. 'Quadra' . . . . .    |                                 |      |
| Triangle island. . . . . | Erection of a 46-foot reinforced concrete lighthouse tower, surmounted by a circular metal lantern; also a wooden dwelling house, out-buildings, &c. . . . . | " . . . . .           | J. D. MacDonald. . . . .             | 12,372                          | 01   |
| Vancouver hbr. . . . .   | Completion of the installation of a semaphore system. . . . .  | " . . . . .           | Capt. McInnis. . . . .               | 255                             | 79   |
| Yuquot . . . . .         | Erection of a combined wooden lighthouse and lightkeeper's dwelling . . . . .  | Day's labour. . . . . | B. Aussette. . . . .                 | 7,651                           | 37   |

## CHANGES AND IMPROVEMENTS IN EXISTING AIDS.

|                             |   |                       |                                      |        |    |
|-----------------------------|---|-----------------------|--------------------------------------|--------|----|
| Active pass. . . . .        | Boathouse repairs. . . . .  | Day's labour. . . . . | L. Cullison. . . . .                 | 303    | 47 |
| Ballenas islands. . . . .   | Building boatslip and windlass. . . . .   | " . . . . .           | L. Cullison. . . . .                 | 191    | 76 |
| Brockton point. . . . .     | Boat landing repairs. . . . .   | " . . . . .           | J. T. Bruce . . . . .                | 86     | 60 |
| Discovery island. . . . .   | Boat landing repairs. . . . .   | " . . . . .           | J. T. Bruce . . . . .                | 129    | 54 |
| First Narrows. . . . .      | Moving gas lighted beacon to a new site; and establishing a fog bell, operated by machinery, at the base of the beacon. . . . . | " . . . . .           | J. T. Bruce . . . . .                | 1,281  | 35 |
| Lennard island. . . . .     | Dwelling house repairs. . . . .   | " . . . . .           | J. F. Davidson. . . . .              | 552    | 54 |
| Prospect point. . . . .     | Repairs to the lightstation. . . . .  | " . . . . .           | J. T. Bruce. . . . .                 | 182    | 25 |
| Pine island. . . . .        | Trail work . . . . .  | " . . . . .           | A. B. Gurney. . . . .                | 60     | 00 |
| Regatta rock. . . . .       | Rebuilding the wooden day beacon, surmounted by a slat-work ball, destroyed by winter gales. . . . .                            | " . . . . .           | Crew C. G. S. 'Quadra' . . . . .     | 75     | 67 |
| Saturna island. . . . .     | Dwelling house repairs. . . . .   | " . . . . .           | L. Cullison. . . . .                 | 198    | 24 |
| Trial island. . . . .       | Lighthouse repairs. . . . .   | " . . . . .           | L. Cullison. . . . .                 | 210    | 15 |
| West Coast Trails . . . . . | See special report. . . . .   | " . . . . .           | A. Barnes and J. Chesterman. . . . . | 28,374 | 41 |



## APPENDIX No. 2.

## ANNUAL REPORT OF THE COMMISSIONER OF LIGHTS.

To the Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the eighth annual report of this branch. The principal work performed has been the substitution of modern dioptric apparatus in a number of major coast lights, the improvement of minor coast lights by the installation of petroleum vapour as an illuminant, an extension of the gas buoy and beacon service throughout the various provinces and the maintenance of lights and other aids to navigation throughout the Dominion, together with the installation of what new apparatus was required at new stations.

The gas buoys and beacons still continue to give satisfaction, and, during the winter just past, there has been singularly small interruption in this service, this being due to the fact that the department is continually adding to its information on this subject thereby making possible a better selection of moorings and more expert handling. In the matter of gas buoys, two losses occurred, viz., gas buoy, type No. 11, serial No. 575, was carried ashore near Centerville, N.S., and proved a total loss, also gas buoy, type No. 9½, serial No. 711, was lost from Kyuquot, B.C., and has not been recovered. On the other hand, however, one No. 11 gas buoy reported last year as having broken adrift from Southwest Head, Cape Sable, has been recovered and repaired. Also a small type gas buoy which was lost in the Georgian bay in 1906 was located by the C.G.S. *Simcoe* and recovered.

Submarine bells have given excellent service, having been in constant operation during the thick weather since their establishment four years ago. Four electric shore stations, Negro Head, Yarmouth, Chebucto Head, and Louisburg were thoroughly overhauled last summer as were likewise the lightship bells at Lurcher, Anticosti, White island, Red island, and Prince shoal. The submarine buoy bell which was placed experimentally off Sambro has given promise of good service and arrangements have been made to acquire two additional buoys on this principle which will be stationed one off Fame Point and one on the Atlantic coast. It would seem, from results so far obtained, that this type of buoy will be found to give such excellent results as to warrant an extension of the service in that direction.

A lightship has been established by the government of Canada at Southeast shoal, Lake Erie, replacing the American lightship which had previously marked that point. This lightship is equipped with lights, aerial fog signal, and submarine bell. Also a considerable extension of the Canadian lighthouse service has been put into effect on the lower Detroit river, the Canadian aids to navigation replacing those maintained by the American government in Canadian waters, the extension involving some 16 gas buoys, 25 minor floating lights and 20 unlighted spars together with five pairs of range lights at Elliot Point, Amherstburg, Fort Malden, Texas Dock easterly, and Texas Dock westerly, which range lights had previously been maintained by American authorities.

With regard to the lighthouse service generally, perhaps the most notable departure or advance has been a substantial increase in lightkeepers' salaries amounting to about 30 per cent for the entire service. Great difficulty had previously been experienced in securing lightkeepers at the previous salaries but this difficulty has been removed and many expressions of satisfaction have been received.

In the Nova Scotia agency, the *Lady Laurier* and *Aberdeen* have been in use in connection with lighthouse and buoy service. The buoys on the Bay of Fundy, coast of Nova Scotia, from Cape Sable inward are under the control of the New Brunswick agency being nearer geographically to St. John than to Halifax.

In the New Brunswick agency, the improvement mentioned last year by reason of the C. G. S. *Stanley* having been detailed for buoy service at that point has been even more marked, the New Brunswick agency being enabled to give more careful attention to buoy moorings in the matter of overhauling and repair.

In the Prince Edward Island agency, the C. G. S. *Brant* is useful in delivering lighthouse supplies but is not large enough to handle the larger buoys. These buoys are handled spring and fall by one of the steamers of the Nova Scotia agency.

In the Quebec agency, the C. G. S. *Druid* is employed principally on buoy work and delivery of lighthouse supplies between Platon and Fame Point. The C. G. S. *Montcalm* is employed in delivering lighthouse supplies at more distant gulf points.

In the Montreal agency, the C. G. S. *Shamrock* is employed both for buoy service and lighthouse inspection work but is found inadequate for the service. The new steamer for this agency, already arranged for, will be a distinct improvement.

The Dominion Lighthouse Depot, Prescott, proves a depot of great usefulness and is in fact indispensable. From the depot is administered the buoy service between Montreal and the Bay of Quinté. The depot is also a distributing point for apparatus throughout the Dominion, likewise a centre for the manufacture of lighthouse apparatus of a special nature and for the repair of same. Photometric and other tests are performed from time to time in order to determine the usefulness of new apparatus or to establish a comparison between various types and much information of a useful character has been compiled, which information is not available elsewhere.

The work in the Parry Sound agency consists particularly in the maintenance of floating aids to navigation in the Georgian bay, the work being handled by the C. G. S. *Simcoe*. This steamer is also employed on inspection work and delivery of lighthouse supplies from Kingston to Fort William and for the removal of lightkeepers from rock stations on Lake Superior late in the fall and placing them on their stations again in the spring.

In the British Columbia agency, much development has taken place particularly in the buoy and beacon service. The service is handled by the C. G. S. *Quadra* and C. G. S. *Newington*, but these vessels have been found to be quite inadequate for the work and it has been necessary from time to time to charter other vessels. Relief is hoped for from the provision of a new steamer which is now being constructed and from the buoy depot which is being established at Prince Rupert. With the hitherto existing conditions it has been almost impossible to maintain a satisfactory lighthouse and buoy service in the northern parts of the province.

Please find herewith enclosures, as follow:—

*Enclosure No. 1.*—Statement, by provinces, showing new aids to navigation established throughout the Dominion also improvements effected in the existing aids during the fiscal year 1910-11.

*Enclosure No. 2.*—Statement, by provinces, showing the number of lights of the several orders, lightships, light boats, lightkeepers, fog alarm stations, warning buoys and submarine bells.

*Enclosure No. 3.*—Statement giving complete list of stations at which gas buoys were in operation throughout the Dominion during the fiscal year, 1910-11.

In conclusion, I desire to express and record my appreciation of the able assistance rendered by my staff, and the untiring application to duty exhibited by each member. It would not have been possible to carry out the large and increasing

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amount of work which is devolving upon this branch without the co-operation of all the officers connected with it.

I have the honour to be, sir,

Your obedient servant,

J. G. MACPHAIL, B.A., B. SC., A. M. CAN. SOC. C.E.

Commissioner.

Office of the Commissioner of Lights,  
Department of Marine and Fisheries,  
April 1, 1911.

(INCLOSURE No. 1.)

STATEMENT, BY PROVINCES, SHOWING NEW AIDS TO NAVIGATION, ESTABLISHED THROUGHOUT THE DOMINION, ALSO IMPROVEMENTS EFFECTED IN EXISTING AIDS DURING THE FISCAL YEAR 1910-11.

NEW BRUNSWICK.

*New Lights.*

*Glenwood, River St. John.*—A pole light has been established on the wharf known locally as Belyea's. The light is fixed white, shown from a 7th order lens lantern.

Latitude, N.  $45^{\circ} 29' 40''$ .

Longitude, W.  $66^{\circ} 7' 45''$ .

*Improvements.*

*Greys point, Belle Isle bay.*—A 7th order lens lantern replaces the pressed lens lantern formerly in use.

*Hay island, Miramichi bay.*—The back light has been improved by the substitution of a 6th order dioptric illuminating apparatus for the pressed lens heretofore used.

*Gull cove, Whitehead island, Bay of Fundy.*—The pole light heretofore used at this point has been replaced by a tower. The illuminating apparatus is dioptric of the 4th order. The light is fixed white.

Latitude, N.  $44^{\circ} 37' 50''$ .

Longitude, W.  $66^{\circ} 41' 52''$ .

*Hay island.*—A 6th order  $180^{\circ}$  lens has been installed at this point.

*Pokesudie, Chaleur bay.*—A 5th order dioptric illuminating apparatus replaces the 7th order lens lantern heretofore used.

*St. Martins, Bay of Fundy.*—The temporary mast light heretofore maintained at this point has been discontinued and a tower built on the extremity of the extension of the east breakwater. The apparatus is dioptric of the 6th order, showing a fixed red light which should be visible 7 miles from all points of approach by water.

*Sapin point, Kouchibouguac bay.*—Owing to the establishment of a lighthouse, the lantern hoisted on a pole has been discontinued. The new light is fixed white, and the illuminating apparatus dioptric of the 6th order.

*South Tracadie.*—The light at this point has been strengthened by the substitution of a 5th order dioptric apparatus for the catoptric apparatus previously in use.



*Other Aids.*

*Pompey ledge, Deer island.*—Beacon erected to mark the entrance to Northwest harbour from the southward inside of Dinner island. The base is concrete, 11 feet high, octagonal in plan, the sides of the lower portion being vertical, and those of the upper portion battered. This base is surmounted by a red pyramid of open steel framework 13 feet high.

Latitude, N.  $44^{\circ} 58' 47''$ .

Longitude, W.  $66^{\circ} 56' 40''$ .

*St. Andrews harbour, Bay of Fundy.*—The following buoys have been established to mark the dredged channel across the bar at the western entrance to St. Andrews harbour:—

1. A conical steel buoy painted red, moored in 3 fathoms of water on the south side of the western entrance of the dredged channel.

Latitude, N.  $45^{\circ} 4' 15''$ .

Longitude, W.  $67^{\circ} 4' 36''$ .

2. A red spar buoy, moored in 9 feet of water on the south side of dredged channel.

Latitude, N.  $45^{\circ} 4' 15''$ .

Longitude, W.  $67^{\circ} 3' 55''$ .

## NOVA SCOTIA.

*Improvements.*

*Big Fish Island, Tusket river.*—The two fixed white catoptric lights heretofore shown at this point have been replaced by an occulting white light with the following characteristic:—

|                  |             |
|------------------|-------------|
| Visible.. . . .  | 11 seconds. |
| Eclipsed.. . . . | 3 "         |
| Visible.. . . .  | 3 "         |
| Eclipsed.. . . . | 3 "         |
| <hr/>            |             |
| In every.. . . . | 20 "        |

The illuminating apparatus is dioptric of the 4th order.

*Cape North, Cape Breton Island.*—A 3rd order single flashing light, showing one bright flash every 5 seconds, has been placed at this point. The illuminant is petroleum vapour burned under an incandescent mantle.

*Cape Sharp.*—The fixed red light at this point has been changed to an occulting white light visible 7 seconds and eclipsed 3 seconds alternately. The illuminating apparatus is dioptric of the 4th order and the illuminant petroleum vapour burned under an incandescent mantle.

*Port Lorne, Bay of Fundy.*—The upper light has been improved by the substitution of a 5th order dioptric illuminating apparatus for the catoptric apparatus heretofore used.

*Other aids.*

*Bull Rock, off Charles Point.*—A bell buoy has been established in 12 fathoms of water  $3\frac{1}{2}$  cables S.  $8^{\circ}$  E. from Bull Rock, off Pleasant harbour.

Latitude, N.  $44^{\circ} 44' 00''$

Longitude, W.  $62^{\circ} 41' 10''$

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This buoy is painted in red and black horizontal bands with 'Bull Rock' in white letters on the deck.

*Bull Rock, off Cape Mocodome, Fisherman's harbour approach.*—A bell buoy has been established  $2\frac{1}{2}$  cables S. 22 E. from Bull Rock, off Cape Mocodome, south coast of Nova Scotia.

Latitude, N.  $45^{\circ} 5' 15''$   
Longitude, W.  $61^{\circ} 38' 23''$

The buoy is moored in 7 fathoms of water. It is painted black with 'Bull Rock' in white letters on deck.

*Caveau shoal, entrance to Cheticamp harbour.*—Bell buoy painted black with 'Caveau shoal' in white letters on deck.

Latitude, N.  $46^{\circ} 39' 30''$   
Longitude, W.  $61^{\circ} 00' 38''$

*Island Harbour, South coast.*—A spar buoy, painted black, has been established to mark the extremity of the shoal extending north from the northwest end of Harbour island. The buoy is moored in 6 fathoms of water.

Latitude, N.  $45^{\circ} 8' 40''$   
Longitude, W.  $61^{\circ} 36' 45''$

*Liscomb shoal, south coast.*—A bell buoy has been moored off the eastern extremity of this shoal. The buoy is painted black with 'Liscomb shoal' in white letters on the deck.

Latitude, N.  $44^{\circ} 58' 42''$   
Longitude, W.  $61^{\circ} 57' 44''$

*Neil harbour, east coast, Cape Breton Island.*—Hand fog horn at lighthouse.

*Port Mouton, south coast.*—Owing to a new channel having been dredged at this point, 7 spar buoys (3 red spars on its north side and 4 black spars on its south side) have been placed. The three-spar buoys that marked the old curved channel in this vicinity have been moved to mark the new channel. The most easterly red spar is moored at the eastern end of the channel  $\frac{1}{8}$  mile S.  $40^{\circ}$  W. from Bell Point.

Latitude, N.  $43^{\circ} 55' 22''$   
Longitude, W.  $64^{\circ} 50' 9''$

The most easterly black spar buoy is moored opposite the most easterly red spar. The second red spar is moored 800 feet from the most easterly red spar, and the second black spar is moored opposite the second red spar. The third red spar is moored 1,550 feet from the most easterly red spar, and the third black spar is moored opposite the third red spar. The fourth (most westerly) black spar is moored on the south side of the basin, 200 feet from the outer end of Neville wharf.

*St. Ann Point, Pubnico harbour entrance.*—Bell buoy.

Latitude, N.  $43^{\circ} 34' 55''$   
Longitude, W.  $65^{\circ} 48' 12''$

*St. Mary's Bay, off southern entrance to Grand Passage.*—An automatic whistling buoy, painted black and white vertical stripes, with the words 'Grand Passage' painted on the body of the buoy, has been established off the southern entrance to this passage.

Latitude, N.  $44^{\circ} 14' 28''$   
Longitude, W.  $66^{\circ} 20' 23''$

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*Torbay*.—An automatic whistling buoy, painted red and black vertical stripes, has been established off the entrance to Torbay.

Latitude, N.  $45^{\circ} 10' 53''$

Longitude, W.  $61^{\circ} 17' 45''$

*Southwest shoal, Tusket river*.—A steel can buoy, moored in 7 fathoms of water and painted red and black horizontal bands, with 'Southwest shoal' in white letters on top, has been established one cable S.  $17^{\circ}$  W. from the southern end of this shoal off the entrance to Tusket river.

Latitude, N.  $43^{\circ} 38' 55''$

Longitude, W.  $65^{\circ} 56' 25''$

(2) A steel can buoy, painted red, has been established in  $4\frac{1}{2}$  fathoms of water at the northern end of Tucker island shoal, Tusket river.

Latitude, N.  $43^{\circ} 43' 15''$

Longitude, W.  $65^{\circ} 57' 7''$

#### *Discontinuance.*

*Liscomb shoal, south coast*.—Black iron can buoy.

*Port Lorne, Bay of Fundy*.—Lower light.

#### *Gas Buoys.*

*Leopard shoal, Halifax harbour*.—The black can buoy heretofore marking this shoal has been replaced by an automatic gas buoy showing an occulting white light. The buoy is painted black, with the name of the shoal in white letters on the deck.

Latitude, N.  $44^{\circ} 38' 20''$

Longitude, W.  $63^{\circ} 34' 2''$ .

#### *Submarine Bells.*

The character of the submarine bell eastward from Harbour shoal, off the entrance to Louisburg harbour, has been changed from 2 strokes to 4 strokes in quick succession about 5 times every minute.

#### PRINCE EDWARD ISLAND.

#### *New Lights.*

*Charlottetown*.—A fixed red light shown from a lantern on the southwest corner of the outer warehouse on the Marine Department's wharf.

*North Rustico*.—Owing to the shifting of the channel over the bar at this point, a new range has been established showing white fixed lights from lanterns hoisted on poles.

#### *Other Aids.*

*Cascumpeque harbour entrance*.—A bell buoy has been established off the outer bar at the entrance to this harbour.

Latitude, N.  $46^{\circ} 48' 32''$ .

Longitude, W.  $63^{\circ} 59' 14''$ .

The buoy is painted black.



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*East Point, Northeast coast.*—An automatic whistling buoy has been established to mark the reef off this point.

Latitude, N.  $46^{\circ} 27' 45''$ .

Longitude, W.  $61^{\circ} 56' 15''$ .

The buoy is painted red with the words 'East Point Reef' in white letters.

*Summerside harbour, Bedeque bay.*—The three spar buoys heretofore maintained to mark the north edge of Island shoal have been replaced by a red steel conical buoy moored in the same position.

## QUEBEC.

*New Lights.*

*Bonaventure river.*—A lens lantern, hoisted on a pole 20 feet high, has been established at the outer end of the wharf. The light is fixed red.

Latitude, N.  $48^{\circ} 2' 20''$ .

Longitude, W.  $65^{\circ} 28' 56''$ .

*Godbout, River St. Lawrence (Front).*—Fixed red light shown from anchor lens lantern hoisted on a pole. (*Back*).—Fixed red light shown from anchor lens lantern hoisted on a pole.

*Cape East, Saguenay river.*—Fixed white light. The illuminating apparatus is dioptric of the 6th order.

*St. Omer, Chaleur bay.*—A lighthouse has been established on the outer end of the wharf at this point.

Latitude, N.  $48^{\circ} 6' 24''$ .

Longitude, W.  $66^{\circ} 11' 45''$ .

The light is fixed red. The illuminating apparatus is dioptric of the 6th order.

*Grand Entry harbour, Magdalen islands.*—An additional light which will constitute the back light of a range, to guide vessels through the entrance channel, has been established on the shoal inside the entrance to the harbour 782 feet N.  $62^{\circ} 45'$  E. from the existing front light. The light is fixed red shown from an anchor lens lantern hoisted on a pole 30 feet high.

*Grand Pabos wharf.*—Fixed red light shown from an anchor lens lantern hoisted on a pole.

*May islet, Gulf of St. Lawrence.*—Fixed white light. The illuminating apparatus is dioptric of the 7th order.

*Moisie river, Gulf of St. Lawrence.*—(*Front*). Fixed red light shown from lens lantern hoisted on a pole. (*Back*). Fixed red light shown from lens lantern hoisted on pole.

There is a white diamond-shaped slatted day mark attached to each light pole.

*Improvements.*

*Bonaventure point, Chaleur bay.*—The fixed white light at this point has been changed to an occulting white light visible 15 seconds and eclipsed 5 seconds alternately. The illuminating apparatus is dioptric of the 5th order.

*Crane island, St. Lawrence river.*—The light at this point has been changed from an occulting white light to a fixed white light. The illuminating apparatus will

remain, as heretofore, dioptric of the 4th order, but the light will be reinforced in the downstream range by reflectors. The illuminant is petroleum vapour burned under an incandescent mantle.

*Macquereau point.*—Vapour light replaces the duplex lamp formerly in service.

#### *Other Aids.*

*Beauport, River St. Lawrence.*—Three black spar buoys have been established to mark the small channel leading to the government wharf at this point. These buoys are moored in about 8 feet low water, and serve as a guide to schooners and lighters coming to or leaving the wharf. The following sextant angles fix the position of the first buoy:—

Beauport church,  $00^{\circ} 00' 00''$

Ste. Petronille church,  $56^{\circ} 25' 00''$

St. Joseph de Levis church,  $47^{\circ} 40' 00''$

The following sextant angles fix the position of the second buoy:—

Beauport church,  $00^{\circ} 00' 00''$

Ste. Petronille church,  $53^{\circ} 44' 00''$

St. Joseph de Levis church,  $46^{\circ} 42' 00''$

The following sextant angles fix the position of the third buoy:—

Beauport church,  $00^{\circ} 00' 00''$

Ste. Petronille church,  $52^{\circ} 45' 00''$

St. Joseph de Levis church,  $46^{\circ} 25' 00''$

*Harrington harbour, Gulf of St. Lawrence.*—1. A black iron can buoy moored in 5 fathoms of water.

Latitude, N.  $50^{\circ} 29' 43''$

Longitude, W.  $59^{\circ} 27' 21''$

2. A red iron conical buoy, moored in  $4\frac{1}{2}$  fathoms of water.

Latitude, N.  $50^{\circ} 29' 44''$

Longitude, W.  $59^{\circ} 26' 56''$

Pointe Noir, Saguenay river entrance.—Hand fog horn.

#### *Discontinuance.*

*Beaujeu Bank.*—Red conical buoy No. 72-B.

*Varde Point, Restigouche River.*—The light boat at this point has been discontinued.

*Lark Reef.* 75—B.—Red conical buoy.

#### *Gas Buoys.*

*Goose Island, River St. Lawrence, Station No. 66—B.*—A gas buoy, painted red, shewing an occulting white light, has been established in 5 fathoms of water, south of Goose Island Reef.

Latitude, N.  $47^{\circ} 9' 4''$

Longitude, W.  $70^{\circ} 24' 52''$

*Matane, River St. Lawrence.*—The bell buoy formerly moored on the outer edge of the shoal off the mouth of Matane river has been replaced by an automatic gas

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and bell buoy. The buoy is painted black. The light is white, automatically occulted at short intervals. The illuminant is acetylene.

*Lark Reef, River St. Lawrence, Station No. 96—B.*—A gas buoy, painted red, showing an occulting white light, has been established on the southeast extremity of Lark reef.

Latitude, N.  $48^{\circ} 3' 40''$

Longitude, W.  $69^{\circ} 38' 25''$

*Ste. Croix Bar, River St. Lawrence, Station No. 36—Q.*—A gas buoy, painted red, showing an occulting white light, has been established at the western end of Ste. Croix bar dredged channel.

Latitude, N.  $46^{\circ} 38' 45''$

Longitude, W.  $71^{\circ} 44' 46''$

*St. Thomas, Station No. 78½—B.*—Gas buoy.

## MONTREAL DIVISION.

*New Lights.*

*Grenville, Ottawa River.*—Lighted buoy. The buoy consists of a square platform, or float, painted black, surmounted by a post carrying a pressed lens lantern showing a fixed white light.

*Pointe du Lac, front light.*—A new lighthouse has been erected at this point. The illuminating apparatus is a 5th order dioptric lens showing a fixed white light. The illuminant is acetylene.

*Magog Wharf.*—A fixed red light shown from a pressed lens lantern on a shelf on the wall of the freight shed.

*Batture St. Antoine Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established on the west side of the river below Petite Ile.

*Batture St. Antoine Traverse, Back Light.*—A fixed white light shown from a pressed lens has been established 109 feet N.  $20^{\circ} 5' E.$  from front light.

*Cardinal Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established on the east side of the river opposite upper end of Deschaillons island.

*Cardinal Traverse, Back Light.*—A fixed white light shown from a pressed lens has been established 188 feet N.  $39^{\circ} 30' E.$  from front light.

*Hebert Point.*—A fixed white light shown from a pressed lens has been established on the east side of the river.

*St. Mark Point.*—A fixed white light shown from a pressed lens has been established on the west side of the river.

*Laperle Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established on the east side of the river, about  $\frac{3}{4}$  miles above St. Ours locks.

*Laperle Traverse, Back Light.*—A fixed white light shown from a pressed lens has been established 228 feet S.  $4^{\circ} 25' E.$  from front light.

*Marcotte Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established on the west side of the river about  $\frac{3}{4}$  mile above St. Antoine church.



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*Marcotte Traverse, Back Light.*—A fixed white light shown from a pressed lens has been established 177 feet S.  $62^{\circ} 15'$  W. from front light.

*Petite Ile Course, Front Light.*—A fixed white light shown from a pressed lens has been established on the east side of the river above Petite Ile.

*Petite Ile Course, Back Light.*—A fixed white light shown from a pressed lens has been established 397 feet S.  $38^{\circ} 30'$  W. from light.

*St. Antoine Church, Point Traverse, Front Light.*—A fixed red light shown from a pressed lens has been established near St. Antoine church, on the west side of the river.

*St. Antoine Church, Point Traverse, Back Light.*—A fixed red light shown from a pressed lens has been established 131 feet N.  $51^{\circ} 28'$  W. from front light.

*St. Charles Point.*—A fixed white light shown from a pressed lens has been established on the east side of the river.

*St. Onge Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established about  $\frac{1}{2}$  mile below north end of Deschaillons island, on the west side of the river.

*St. Ours Locks Traverse, Back Light.*—A fixed white light shown from a pressed lens has been established 165 feet N.  $37^{\circ} 45'$  E. from front light.

*St. Ours Locks Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established on the east side of the river, opposite upper pier of St. Ours locks.

*St. Ours Locks Travers, Back Light.*—A fixed white light shown from a pressed lens has been established 165 feet N.  $20^{\circ} 5'$  E. from front light.

*St. Ours Locks Traverse, Back Light.*—A fixed white light shown from a pressed lens has been established on the west side of the river below Petite Ile.

*Windmill Point Traverse, Front Light.*—A fixed white light shown from a pressed lens has been established 152 feet N.  $29^{\circ} 50'$  E. from front light.

#### *Improvements.*

*Pointe-à-Cadieux.*— $240^{\circ}$  6th order lens replaces the catoptric apparatus heretofore in use.

#### *Other Aids.*

*Boucherville Channel, River St. Lawrence.*—The following buoys have been established in the upper, or southern, part of this channel:—

1. A red conical buoy one-half mile below Ile Charron.

Latitude, N.  $45^{\circ} 35' 47''$

Longitude, W.  $73^{\circ} 27' 56''$

2. A black iron can buoy one-eighth mile above northeast extremity of Ile Charron.

Latitude,  $45^{\circ} 35' 15''$

Longitude, W.  $73^{\circ} 28' 26''$

3. A black iron can buoy one-third mile below Iles Vertes on west edge of 8-foot patch.

Latitude, N.  $45^{\circ} 34' 44''$

Longitude, W.  $73^{\circ} 28' 54''$

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4. A barrel buoy, painted black and white, one-fourth mile below Iles Vertes.

Latitude, N.  $45^{\circ} 34' 42''$

Longitude, W.  $73^{\circ} 29' 3''$

5. A barrel buoy, painted black and white, one-eighth mile below Iles Vertes.

Latitude, N.  $45^{\circ} 34' 38''$

Longitude, W.  $73^{\circ} 29' 14''$

6. A barrel buoy, painted black and white, one-eighth mile above Ile Charron.

Latitude, N.  $45^{\circ} 34' 34''$

Longitude, W.  $73^{\circ} 29' 25''$

*Cap Levrard Channel, River St. Lawrence.*—The following changes have been made in the buoyage of this channel:—

A black can buoy, 103—Q, has been removed 103 feet S.  $20^{\circ}$  E. from old position.

An iron conical buoy, painted red, numbered 104—Q, has been established opposite the black can buoy No. 103—Q.

Latitude, N.  $46^{\circ} 33' 7''$

Longitude, W.  $72^{\circ} 9' 10''$

An iron conical buoy, painted red, numbered 106—Q, has been established opposite the black gas buoy No. 105—Q.

Latitude, N.  $46^{\circ} 32' 33''$

Longitude, W.  $72^{\circ} 10' 00''$

A red spar buoy, numbered 108—Q, has been established opposite the black spar buoy No. 107—Q.

Latitude, N.  $46^{\circ} 32' 17''$

Longitude, W.  $72^{\circ} 10' 23''$

*Ile aux Tourtes, Lake of Two Mountains, Ottawa River.*—A red spar buoy has been moored on the north side of the steamboat channel to mark a small shoal with a depth of 5 feet over it at low water lying northeastward of Ile aux Tourtes, about  $1\frac{3}{4}$  miles above Ste. Anne de Bellevue.

#### Gas Buoys.

*Cap a la Roche, No. 92—Q.*—An automatic gas buoy, painted red, showing an occulting white light.

*Pointe aux Trembles.*—The black can buoy known as No. 157—M, has been replaced by a gas buoy, painted black. The light is an occulting white light, and the illuminant acetylene.

Latitude, N.  $45^{\circ} 37' 58''$

Longitude, W.  $73^{\circ} 29' 11''$

#### Discontinuance.

*Point du Lac.*—The lightship temporarily maintained at this curve has been discontinued.

*Cap a la Roche, No. 92—Q.*—Red conical buoy.

*River St. Lawrence Ship Channel, between Quebec and Montreal.*—Red conical buoy No. 78—Q.

## ONTARIO.

*New Lights.*

*Cobourg, Lake Ontario.*—Gas lighted beacon has been established on the outer end of the extended pier. The light is white, occulted at short intervals. The illuminant is acetylene.

Latitude, N.  $43^{\circ} 56' 57''$

Longitude, W.  $78^{\circ} 8' 58''$

*Onderdonk Point, Bay of Quinte.*—A lighthouse has been established at this point.

Latitude, N.  $44^{\circ} 4' 39''$

Longitude, W.  $77^{\circ} 32' 25''$

The illuminating apparatus is dioptric of the 7th order. The light is fixed white.

*Sister Rock, Wabuno Channel, Parry Sound approach.*—A lighted beacon has been established on the south end of this rock. The light is fixed white and shown from a lens lantern.

Latitude, N.  $45^{\circ} 14' 19''$

Longitude, W.  $80^{\circ} 13' 10''$

*Victoria Harbour, Georgian Bay.*—Range lights.

*Front.* Lighthouse stands on Bergie point. The light is fixed red. The illuminating apparatus is dioptric of the 5th order.

Latitude, N.  $44^{\circ} 45' 20''$

Longitude, W.  $79^{\circ} 47' 00''$

*Back.* Lighthouse stands on the hill behind the village. The light is fixed red. The illuminating apparatus is catoptric.

*Shaganash Island, Lake Superior.*—A lighthouse has been erected on the western end of island No. 10, a small island lying to the westward of Shaganash island. The light shown therefrom is fixed white and the illuminating apparatus is dioptric of the 5th order.

Latitude, N.  $48^{\circ} 26' 10''$

Longitude, W.  $88^{\circ} 28' 50''$

*Island No. 118—A, Thousand Islands, River St. Lawrence.*—A light has been established on this island which lies about 500 feet to the southward of Bridge island.

Latitude, N.  $44^{\circ} 27' 58''$

Longitude, W.  $75^{\circ} 50' 5''$

The light is fixed white and shown from a 31-day Wigham lamp.

*Southeast Shoal, Pelee Passage, Lake Erie.*—The lightship heretofore maintained by the Lake Carriers' Association has been replaced by a steel lightship maintained by the government of Canada.

There are two fixed white lights shown from 7th order lens lanterns hoisted on arms projecting from the foremast.

The boat is equipped with a steam fog whistle. The lightship is fitted with a submarine bell which, during thick or foggy weather will strike the number three every 14 seconds as follows,—three strokes at intervals of two seconds followed by an interval of ten seconds.



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*Waubashene, Georgian bay.*—Range lights established. The lights are fixed red shown from lanterns on poles. The illuminating apparatus in each consists of a 32 c.p. incandescent electric lamp placed in the focus of a paraboloidal reflector.

(1) One range will be known as Seven river range, it stands on the east side of Sturgeon bay about one-third mile west of Waubashene village. The front light of this range stands on the shore three-eighth mile S.  $85^{\circ}$  W. from the Roman Catholic church.

Latitude, N.  $44^{\circ} 45' 20''$

Longitude, W.  $79^{\circ} 43' 00''$

The back light stands 400 feet S.  $6\frac{1}{4}^{\circ}$  from the front light.

(2) A second range, which will be known as Waubashene range, is on the flat north of the channel opposite the village. The front light stands on the west end of an inlet at Waubashene, one-eighth mile N.  $59^{\circ}$  east from extremity of the northerly point on south side of channel.

Latitude, N.  $44^{\circ} 45' 43''$

Longitude, W.  $79^{\circ} 42' 17''$

The back light stands on the east end of the islet, 500 feet S.  $84^{\circ}$  E. from the front light.

*Improvements.*

*Burlington bay, Lake Ontario.*—The main light at this point has been improved by the substitution of a 4th order dioptric illuminating apparatus for the catoptric apparatus formerly used. The illuminant is petroleum vapour burned under an incandescent mantle. The light remains fixed white.

*Gereaux island, North channel.*—The five mammoth lamps and reflectors heretofore in operation have been replaced by a 4th order lens. The illuminant is petroleum vapour burned under an incandescent mantle.

*McTavish point, Ottawa river.*—The light shown heretofore from a lantern on a pole has been replaced by a light shown from a lighthouse. The light is fixed white and the illuminating apparatus dioptric of the 7th order.

*Red rock, Georgian bay.*—The fixed white light shown at this point has been changed to an occulting white light visible 8 seconds and eclipsed 4 seconds alternately. The illuminant is petroleum vapour burned under an incandescent mantle.

*Port Burwell, Lake Ontario.*—The catoptric light, consisting of three No. 1 burners and reflectors, has been replaced by a dioptric 4th order light. The illuminant is petroleum vapour burned under an incandescent mantle.

*Port Maitland, Lake Erie.*—The catoptric light heretofore in operation at this point has been replaced by a dioptric 4th order light. The illuminant is petroleum vapour burned under an incandescent mantle.

*Kincardine, Lake Huron.*—The alternating red and white catoptric light has been changed to a flashing white light, showing one bright flash every 20 seconds. The illuminating apparatus is dioptric of the 4th order and the illuminant petroleum vapour burned under an incandescent mantle.

*Port Arthur, Lake Superior.*—The fixed white light shown from the lighthouse on the southern end of the northern breakwater has been changed to an occulting white light, visible 5 seconds and eclipsed 3 seconds alternately. The illuminating apparatus is dioptric of the 4th order.

*Port Stanley, Lake Erie.*—The light of the acetylene beacon at this point has been changed from a fixed red to a white light, occulted at short intervals.

#### *Other Aids.*

*Aultsville, River St. Lawrence.*—The following buoys have been established to mark the channel between Steens island and the north shore of the River St. Lawrence in the vicinity of Aultsville:—

1. Red spar buoy in 15 feet of water on the shoal on the north side of channel, north of eastern extremity of Steens island.
2. Black spar buoy in 15 feet of water at east end of rush bed north of Steens island and about 200 feet west of its eastern extremity.
3. Red spar buoy in 13 feet of water on the north side of channel about 50 feet from the shore and 1,000 feet west of Aultsville dock.
4. Red spar buoy at the upper entrance of Aultsville channel in 17 feet of water and 400 feet from the shore.

*Howe island, Thousand Islands, River St. Lawrence.*—A spar buoy, painted in red and black horizontal bands, has been established on the middle of the 13-foot shoal two-third miles off the south shore of Howe island.

Latitude, N. 44° 16' 35".

Longitude, W. 76° 12' 11".

*Port Arthur, Lake Superior.*—A fog bell operated by machinery has been established at the lighthouse on the southern end of the northern breakwater. It will, during thick or foggy weather, give one stroke every 6 seconds.

*Tobermory.*—Hand fog horn.

*Black Bear island, Man.*—Hand fog horn.

*Cox reef, Man.*—Hand fog horn.

*George island, Man.*—Hand fog horn.

*Gull harbour, Man.*—Hand fog horn.

#### *Gas Buoys.*

*Grass island.*—Station No. 87—F, No. 8½ gas buoy.

*Jackass shoal, River St. Lawrence.*—Station No. 72—U, gas buoy painted red, showing an occulting white light.

*Niagara river.*—Gas and bell buoy.

*Renshaw island.*—Station No. 83—F, gas buoy.

#### *Discontinuance.*

*Cobourg, Lake Ontario.*—Fixed white pole light on east pier. Fixed red pole light at bend of west pier.

*Jackass shoal, River St. Lawrence; Station No. 72—U.*—Red spar buoy.

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## BRITISH COLUMBIA.

*New Lights.*

*Friendly Cove, Nootka Sound.*—A lighthouse has been established on the summit of the middle and largest island of the St. Miguel group lying off the entrance to this cove. The illuminating apparatus is dioptric of the 4th order.

Latitude, N.  $49^{\circ} 35' 27''$

Longitude, W.  $126^{\circ} 37' 35''$ .

*New Lights.*

*False Creek, English Bay, Burrard Inlet.*—A pole with a cross arm at the top, from which two lanterns are suspended, has been erected at the south end of Nicola street, city of Vancouver.

Latitude, N.  $49^{\circ} 16' 41''$

Longitude, W.  $123^{\circ} 8' 28''$

The light shown from each lantern is fixed red. The illuminant is electricity.

*Lardo.*—A fixed white light shown from an anchor lens lantern hoisted on a mast.

*Patey Rock, Saanich inlet.*—Beacon showing a fixed white light.

*Proctor, Kootenay Lake, West Arm.*—(1) The light at this point has been fitted with a red sector. The light shows white from S.  $47^{\circ}$  W., through south to east, and the remainder, showing over the west arm of Kootenay lake is red.

(2) Range lights have been established at Proctor to show the entrance to west arm of Kootenay lake. The lights are fixed white shown from pressed lens lanterns hoisted on poles.

*Somass River, Vancouver Island.*—A pile beacon showing a fixed white light.

*Triangle Island, Vancouver Island.*—A lighthouse has been erected on the summit of this island, which is the westernmost of the Scott islands. The light is flashing white, showing a group of four bright flashes every ten seconds, thus:

|                  |              |
|------------------|--------------|
| Flash. . . . .   | .28 seconds. |
| Eclipse. . . . . | 1.28 "       |
| Flash. . . . .   | .28 "        |
| Eclipse. . . . . | 1.28 "       |
| Flash. . . . .   | .28 "        |
| Eclipse. . . . . | 1.28 "       |
| Flash. . . . .   | .28 "        |
| Eclipse. . . . . | 5.04 "       |

The illuminating apparatus is dioptric of the first order, and the illuminant petroleum vapour burned under an incandescent mantle.

Latitude, N.  $50^{\circ} 51' 48''$

Longitude, W.  $129^{\circ} 4' 50''$

*Improvements.*

*Active Pass, Mayne Island.*—The light at this point has been improved by the substitution of a 5th order dioptric illuminating apparatus for the 6th order lens heretofore used. The illuminant is petroleum vapour burned under an incandescent mantle.



*Portlock Point, Prevost Island, Trincomali channel.*—The 7th order lens heretofore in use has been replaced by a 5th order dioptric illuminating apparatus. The illuminant is petroleum vapour burned under an incandescent mantle.

*Prospect Point, First Narrows, Burrard Inlet.*—The light at this point has been changed from fixed white to an occulting white light, visible six seconds and eclipsed three seconds alternately. The illuminating apparatus is dioptric of the 5th order and the illuminant petroleum vapour burned under an incandescent mantle. For the purpose of diminishing the brightness of the light to vessels in its close proximity, a red sector has been inserted in this light to show over an arc of  $135^{\circ}$  from S.  $60^{\circ}$  E. to S.  $75^{\circ}$  W.

*Georgina Point, Mayne Island, Active Pass.*—The fixed white light at this point has been changed to an occulting white light, visible five seconds and eclipsed five seconds alternately.

#### *Other Aids.*

*Bamford Islands, Malacca Passage, Chatham Sound.*—A beacon has been erected on the northernmost rock that dries off the reefs, three cables eastward of these islands.

Latitude, N.  $54^{\circ} 4' 7''$

Longitude, W.  $130^{\circ} 17' 51''$

The beacon is a concrete structure, the lower portion being square and the upper portion tapering.

*Clarke Rock, Horswell Channel.*—The black platform buoy which has heretofore marked this rock has been replaced by a black steel can buoy.

*David Point, Lowe Inlet.*—White slatwork day beacon.

*First Narrows, Western Entrance, Burrard Inlet.*—The gas lighted beacon on the northern shore has been moved to a new position 300 feet N.  $39^{\circ}$  W. from the old site.

A fog bell operated by machinery has been placed on the concrete base of the beacon. It will, during thick or foggy weather, be sounded at short intervals.

*Porpoise Harbour Entrance, Chatham Sound.*—Spar buoy, painted red.

*Second Narrows, Burrard Inlet.*—Two wooden pile beacons, consisting of five piles each, and each surrounded by a lattice-work drum painted white, have been established to show the extent of the shoal ground east and west of Seymour creek.

*Second Narrows, Burrard Inlet.*—Steel can buoy painted black surmounted by a cage.

*Stockholm island, Clayoquot sound.*—A concrete beacon has been established on a rock which dries 5 feet off this island, in the eastern end of Village channel. The beacon is square in plan, has the natural grey colour of concrete and rises 5 feet above high water mark. The concrete is surmounted by a wooden topmark consisting of a lattice-work ball 6 feet in diameter, the whole showing 10 feet above the concrete and painted red.

*Tree Bluff (Jap point), Chatham sound.*—A steel can buoy surmounted by a lattice-work drum, the whole painted black, has been established off the western extremity of the shoal ground westward from this point, south side of entrance to Big bay.

*Victoria harbour, Vancouver island.*—Spar buoy, painted red and black horizontal bands, to mark a small isolated rock on the western side of the fairway.

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*Rock point, Vancouver island, about  $\frac{3}{4}$ -mile west of Rocky bay.*—Cone-shaped wooden day beacon painted white.

Latitude, N.  $50^{\circ} 20' 11''$ .

Longitude, W.  $125^{\circ} 29' 57''$ .

*Ripple point, Vancouver island.*—Cone-shaped wooden day beacon painted white.

Latitude, N.  $50^{\circ} 21' 45''$ .

Longitude, W.  $125^{\circ} 34' 36''$ .

*West Thurlow island.*—Cone-shaped wooden day beacon painted white.

Latitude, N.  $50^{\circ} 22' 23''$ .

Longitude, W.  $125^{\circ} 45' 28''$ .

*Gas Buoys and Beacons.*

*Camp island, Loma passage.*—A gas lighted beacon has been established at the south end of this island.

Latitude, N.  $52^{\circ} 6' 6''$ .

Longitude, W.  $128^{\circ} 8' 43''$

The light is automatically occulted at short intervals, and the illuminant is acetylene.

*Crane islet, New Channel, Queen Charlotte sound.*—Automatic acetylene gas beacon showing a white occulting light.

Latitude, N.  $50^{\circ} 50' 42''$ .

Longitude, W.  $127^{\circ} 31' 25''$ .

*Cortez island, Strait of Georgia, Station No. 50.*—Automatic gas and bell buoy painted red. The light is a white light occulted at short intervals. The illuminant is acetylene.

*Helmicken island, Johnstone strait.*—A gas lighted beacon has been established at the south end of this island.

Latitude, N.  $50^{\circ} 23' 51''$ .

Longitude, W.  $125^{\circ} 52' 10''$ .

The light is automatically occulted at short intervals and the illuminant is acetylene.

*Low island, Hecate strait, Queen Charlotte islands.*—Automatic acetylene gas beacon showing an occulting white light.

Latitude, N.  $52^{\circ} 54' 40''$ .

Longitude, W.  $131^{\circ} 30' 50''$ .

*Mary Anne point, Galiano island, Active pass.*—Automatic acetylene gas beacon showing a red occulting light.

Latitude, N.  $48^{\circ} 51' 29''$ .

Longitude, W.  $123^{\circ} 18' 45''$ .

(ENCLOSURE No. 2)

STATEMENT, by provinces, showing the number of lights of the several orders, lightships, lightboats, lightkeepers, fog alarm stations, warning buoys and submarine bells.

|                           | Lighthouses. | 1st order lights. | 2nd order lights. | 3rd order lights. | 4th order lights. | 5th order lights. | 6th order lights. | 7th order lights. | Pressed lens lights. | Catoptric lights. | Electric hull lights. | Total. | Lightships. | Lightboats. | Lightkeepers. | Fog alarm stations only. | Diaphones. | Fog guns and bombs. | Fog horns and trumpets. | Fog whistles. | Sirens. | Fog bells. | Hand fog horns. | Hand fog bells. | Gas buoys. | Whistling buoys. | Bell buoys. | Submarine bells. |
|---------------------------|--------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|-------------------|----------------------|-------------------|-----------------------|--------|-------------|-------------|---------------|--------------------------|------------|---------------------|-------------------------|---------------|---------|------------|-----------------|-----------------|------------|------------------|-------------|------------------|
| New Brunswick.....        | 117          | ...               | 2                 | 5                 | 10                | 9                 | 7                 | 62                | 13                   | 38                | 1                     | 147    | 1           | 1           | 121           | 4                        | 8          | ...                 | 6                       | 2             | ...     | 3          | 19              | ...             | 23         | 4                | 7           | 1                |
| Nova Scotia.....          | 241          | 4                 | 4                 | 7                 | 10                | 17                | 29                | 64                | 2                    | 113               | 5                     | 273    | 2           | ...         | 260           | 2                        | 15         | ...                 | 1                       | 2             | 6       | 5          | 46              | ...             | 30         | 17               | 41          | 4                |
| Prince Edward Island..... | 43           | ...               | ...               | ...               | 10                | ...               | 1                 | 4                 | 1                    | 59                | ...                   | 75     | ...         | ...         | 49            | ...                      | 1          | ...                 | ...                     | ...           | ...     | ...        | ...             | ...             | 6          | 2                | 1           | ...              |
| Quebec.....               | 139          | 5                 | 7                 | 14                | 12                | 7                 | 7                 | 37                | 8                    | 84                | ...                   | 181    | 5           | ...         | 151           | 2                        | 22         | 6                   | 1                       | 3             | 1       | ...        | 16              | 2               | 37         | 2                | ...         | 4                |
| Montreal.....             | 115          | ...               | ...               | ...               | 10                | 4                 | ...               | 29                | 36                   | 113               | ...                   | 192    | 3           | ...         | 139           | ...                      | 23         | ...                 | ...                     | ...           | ...     | ...        | ...             | ...             | 68         | ...              | ...         | ...              |
| Ontario.....              | 225          | ...               | 4                 | 6                 | 30                | 9                 | 12                | 123               | 24                   | 94                | 9                     | 311    | 1           | ...         | 190           | ...                      | 23         | ...                 | 1                       | 3             | 1       | 4          | 38              | 1               | 78         | 1                | 3           | 1                |
| Manitoba.....             | 6            | ...               | ...               | ...               | ...               | 2                 | ...               | 4                 | ...                  | 4                 | ...                   | 11     | ...         | ...         | 6             | ...                      | ...        | ...                 | ...                     | ...           | ...     | ...        | ...             | ...             | ...        | ...              | ...         | ...              |
| British Columbia.....     | 60           | 4                 | 1                 | 2                 | 6                 | 7                 | 3                 | 56                | 13                   | 6                 | 3                     | 101    | 1           | ...         | 60            | 1                        | 13         | ...                 | 1                       | ...           | ...     | 11         | 4               | ...             | 18         | 2                | 2           | ...              |
| Totals .....              | 952          | 13                | 18                | 34                | 89                | 55                | 59                | 379               | 115                  | 511               | 18                    | 1291   | 13          | 1           | 976           | 9                        | 82         | 8                   | 12                      | 14            | 2       | 23         | 129             | 3               | 260        | 28               | 55          | 10               |



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The above number of lights does not include those shown from, lightships, light-boats and gas buoys. The lightkeepers number more than the stations owing to the fact that some stations have more than one lighthouse with different keepers in charge. Fog alarm stations where no lights are shown have keepers in charge and these are included in the number of lightkeepers.

Besides the above mentioned lights there are the following lights listed in the List of Lights which are not under the control of the Department:—

|                       |    |
|-----------------------|----|
| New Brunswick.....    | 1  |
| Nova Scotia.....      | 3  |
| Quebec.....           | 8  |
| Montreal.....         | 8  |
| Ontario.....          | 21 |
| British Columbia..... | 5  |

## (INCLOSURE No. 3.)

Statement showing complete list of stations at which gas buoys were in operation throughout the Dominion during the fiscal year 1910-11.

## UNDER THE NOVA SCOTIA AGENCY—DISTRICT No. 1.

| Station No. | Name of Station.                      | Description of Buoy. |
|-------------|---------------------------------------|----------------------|
| 24          | Pubnico.....                          | Gas and whistling.   |
| 27          | Cape Sable, Southwest Ledge.....      | "                    |
| 29          | Brazil Rock.....                      | "                    |
| 32          | Shelburne.....                        | "                    |
| 35          | Lockeport.....                        | "                    |
| 37          | Little Hope.....                      | "                    |
| 39          | Liverpool.....                        | "                    |
| 40          | Liverpool Fairway.....                | Gas and bell.        |
| 45          | La Have.....                          | "                    |
| 48          | Lunenburg.....                        | Gas and whistling.   |
| 49          | Lunenburg, East Point Ledge.....      | Gas and bell.        |
| 54          | North East Shoal.....                 | Gas and whistling.   |
| 60          | Sanibro.....                          | "                    |
| 61          | Outer Automatic, Halifax Harbour..... | "                    |
| 62          | Inner Automatic, Halifax Harbour..... | "                    |
| 63          | Neverfail, Halifax Harbour.....       | Gas.                 |
| 65          | Thrumpeap.....                        | Gas and bell.        |
| 67          | Middle Ground, Halifax Harbour.....   | Gas.                 |
| 68          | Leopard Shoal.....                    | "                    |
| 70          | Egg Island.....                       | Gas and whistling.   |
| 72          | Sheet Harbour.....                    | "                    |
| 76          | Liscomb.....                          | "                    |
| 80          | Isaac Harbour.....                    | "                    |
| 84          | Whitehead.....                        | "                    |
| 86          | Canso or Grime Shoal.....             | "                    |
| 90          | Cerberus Rock.....                    | "                    |
| 94          | Petitdegrat.....                      | Gas and bell.        |
| 100         | Guion Island.....                     | Gas and whistling.   |
| 102         | Louisburg.....                        | "                    |
| 108         | Flat Point.....                       | "                    |
| 109         | South-East Bar, Sidney.....           | Gas.                 |

## UNDER THE NEW BRUNSWICK AGENCY—DISTRICT No. 2.

| Station No. | Name of Station.                          | Description of Buoy. |
|-------------|---|----------------------|
| 4-S.        | Blonde Rock .....                         | Gas and whistling.   |
| 6-S.        | South-West Fairway, Yarmouth .....        | "                    |
| 8-S.        | Cape Fourchu .....                        | "                    |
| 10-S.       | Hen and Chickens, Yarmouth .....          | Gas and bell.        |
| 12-S.       | South West Ledge, Brier Island .....      | Gas and whistling.   |
| 14-S.       | North West Ledge, Brier Island .....      | "                    |
| 16-S.       | Avon River .....                          | Gas.                 |
| 3           | Old Proprietor .....                      | Gas and whistling.   |
| 5           | North Wolves .....                        | "                    |
| 7           | Lepreau .....                             | "                    |
| 9           | Partridge Island .....                    | "                    |
| 18          | Foul Ground, St. John Harbour .....       | Gas.                 |
| 20          | Quaco Ledge .....                         | Gas and whistling.   |
| 31          | Scaumenac, Restigouche River .....        | Gas.                 |
| 32          | Point Lanir, Restigouche River .....      | "                    |
| 34          | Garde Pointe, Restigouche River .....     | "                    |
| 36          | Oak Point, Restigouche River .....        | "                    |
| 38          | Traverse, Restigouche River .....         | "                    |
| 40          | Busteed, Restigouche River .....          | "                    |
| 42          | Horseshoe Bar East, Miramichi .....       | "                    |
| 44          | Horseshoe Bar West, Miramichi River ..... | "                    |
| 46          | Caraquet Harbour, East .....              | "                    |
| 47          | Caraquet Harbour, West .....              | "                    |

## UNDER THE PRINCE EDWARD ISLAND AGENCY—DISTRICT No. 3.

|   |                                      |                   |
|---|--------------------------------------|-------------------|
| 1 | Indian Rocks .....                   | Gas and whistling |
| 2 | Point Prim .....                     | "                 |
| 3 | Fitzroy Rock .....                   | "                 |
| 4 | Mid Straits .....                    | "                 |
| 5 | Miscouche Shoal .....                | "                 |
| 6 | Zephyr Rock, Shediac Bay, N. B. .... | Gas.              |

## UNDER THE QUEBEC AGENCY—DISTRICT No. 4.

|        |   |               |
|--------|---|---------------|
| 21-B.  | Matane .....                            | Gas and bell. |
| 27-B.  | Father Point .....                      | Gas.          |
| 29-B.  | Rimouski Road .....                     | "             |
| 38-B.  | Barrett Ledge .....                     | Gas and bell. |
| 51-B.  | Pilgrim Shoal .....                     | "             |
| 56-B.  | Traverse, Middle Ground .....           | Gas.          |
| 58-B.  | South Traverse Middle Ground .....      | "             |
| 59-B.  | Lower Traverse .....                    | "             |
| 60-B.  | Upper Traverse .....                    | "             |
| 64-B.  | Channel Patch .....                     | Gas and bell. |
| 65-B.  | Port Joli .....                         | Gas.          |
| 66-B.  | Goose Island Reef .....                 | "             |
| 67-B.  | Beaujeu Bank, Northeast extremity ..... | " and bell.   |
| 69-B.  | Beaujeu, West end .....                 | "             |
| 70-B.  | Beaujeu Bank, West end .....            | " and bell.   |
| 77-B.  | St. Thomas .....                        | Gas.          |
| 78-B.  | St. Thomas .....                        | "             |
| 80-B.  | Grosse Isle .....                       | "             |
| 86-B.  | Madame Island Reef .....                | "             |
| 87-B.  | Beaumont Reef .....                     | "             |
| 89-B.  | Point Levis .....                       | "             |
| 96-B.  | Lark Reef, South end .....              | "             |
| 102-B. | Morin Shoal .....                       | "             |
| 106-B. | Grande Pointe .....                     | "             |
| 110-B. | Eastern Narrows, North Traverse .....   | "             |
| 10-Q.  | Fly Bank .....                          | "             |
| 15-Q.  | Point Nicholas .....                    | "             |
| 24-Q.  | Pointe aux Trembles .....               | "             |
| 28-Q.  | Point St. Antoine .....                 | "             |
| 34-Q.  | Ste. Croix .....                        | "             |
| 36-Q.  | Ste. Croix Bar .....                    | "             |
| 44-Q.  | Cap Santé .....                         | "             |
| 49-Q.  | Point Platon .....                      | "             |

## SESSIONAL PAPER No. 21

## MONTREAL DIVISION—DISTRICT No. 5.

| Station No. | Name of Station.                | Description of Buoy. |
|-------------|---------------------------------|----------------------|
| 2-C.        | Point Citrouille.....           | Gas.                 |
| 15-C.       | Poulier Carpentier.....         | "                    |
| 20-C.       | Ile Bigot.....                  | "                    |
| 23-C.       | Becancour, Lower Traverse.....  | "                    |
| 30-C.       | Becancour Bend.....             | "                    |
| 39-C.       | Becancour, Upper Traverse.....  | "                    |
| 43-C.       | Cape Madeleine.....             | "                    |
| 55-C.       | Ile aux Cochons.....            | "                    |
| 59-C.       | Three Rivers Shoal.....         | "                    |
| 4-L.        | Poulier Laforce.....            | "                    |
| 9-L.        | English Bank.....               | "                    |
| 13-L.       | Curve No. 3.....                | "                    |
| 17-L.       | ".....                          | "                    |
| 21-L.       | ".....                          | "                    |
| 25-L.       | ".....                          | "                    |
| 35-L.       | Pointe du Lac course.....       | "                    |
| 47-L.       | ".....                          | "                    |
| 57-L.       | Yamachiche Bend.....            | "                    |
| 58-L.       | ".....                          | "                    |
| 67-L.       | Curve No. 2 to White Buoy.....  | "                    |
| 79-L.       | ".....                          | "                    |
| 85-L.       | ".....                          | "                    |
| 91-L.       | Curve No. 1 to Curve No. 2..... | "                    |
| 97-L.       | ".....                          | "                    |
| 100-L.      | ".....                          | "                    |
| 111-L.      | Ile aux Raisins.....            | "                    |
| 123-L.      | Pointe aux Soldats.....         | "                    |
| 136-L.      | Ile de Grace.....               | "                    |
| 146-L.      | Nepigon Shoal.....              | "                    |
| 1-M.        | Ile aux Foins.....              | "                    |
| 5-M.        | St. Ours Traverse.....          | "                    |
| 16-M.       | Bellmouth Curve.....            | "                    |
| 20-M.       | ".....                          | "                    |
| 24-M.       | ".....                          | "                    |
| 31-M.       | Contrecoeur Bend.....           | "                    |
| 45-M.       | Contrecoeur Junction.....       | "                    |
| 82-M.       | Plum Island.....                | "                    |
| 89-M.       | Verchères.....                  | "                    |
| 103-M.      | Poulier des Trois Bouées.....   | "                    |
| 117-M.      | Cap St. Michel.....             | "                    |
| 124-M.      | Ile des Lauriers.....           | "                    |
| 129-M.      | Varenes Curve.....              | "                    |
| 133-M.      | Varenes Curve.....              | "                    |
| 149-M.      | Pointe aux Trembles Bend.....   | "                    |
| 157-M.      | Pointe aux Trembles Curve.....  | "                    |
| 174-M.      | Longue Pointe.....              | "                    |
| 175-M.      | Pointe aux Trembles.....        | "                    |
| 177-M.      | Pouliet à Gagnon.....           | "                    |
| 181-M.      | Longueuil.....                  | "                    |
| 191-M.      | Longueuil.....                  | "                    |
| 193-M.      | Longueuil.....                  | "                    |
| 194-M.      | Maisonnette.....                | "                    |
| 195-M.      | Ile Ronde.....                  | "                    |
| 196-M.      | Longueuil.....                  | "                    |
| 51-Q.       | Portneuf.....                   | "                    |
| 68-Q.       | Batture Simon.....              | "                    |
| 73-Q.       | Batture du Chêne.....           | "                    |
| 77-Q.       | Batture à Cadieux.....          | "                    |
| 80-Q.       | Cape Charles.....               | "                    |
| 90-Q.       | Cap à la Roche Curve.....       | "                    |
| 92-Q.       | Cap à la Roche.....             | "                    |
| 97-Q.       | Upper Cap à la Roche.....       | "                    |
| 105-Q.      | Cap Levard.....                 | "                    |
| 110-Q.      | Cap Levard.....                 | "                    |
| 115-Q.      | Batiscan Course.....            | "                    |
| 119-Q.      | Batture St. Pierre.....         | "                    |
| 123-Q.      | Batiscan Anchorage.....         | "                    |
| 129-Q.      | Batture Perron.....             | "                    |



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## UNDER THE PRESCOTT AGENCY—DISTRICT No. 6.

| Station No. | Name of Station.  | Description of Buoy. |
|-------------|---|----------------------|
| 25-F.       | Grosse Point.   | Gas.                 |
| 30-F.       | Soulanges Canal, Entrance.  | "                    |
| 36-F.       | Coteau Landing.   | "                    |
| 40-F.       | Hay Point.  | "                    |
| 43-F.       | West end of Middle Ground.  | "                    |
| 46-F.       | Port Lewis.   | "                    |
| 48-F.       | Point Mouille Flats.  | "                    |
| 64-F.       | Lancaster.  | "                    |
| 68-F.       | Island Bank.  | "                    |
| 69-F.       | East Lancaster Bar.   | "                    |
| 76-F.       | Lancaster Bar.  | "                    |
| 78-F.       | Squaw Island.   | "                    |
| 83-F.       | Renshaw Island.   | "                    |
| 84-F.       | Clarks Island.  | "                    |
| 87-F.       | Grass Island.   | "                    |
| 96-F.       | St. Regis Dyke, West End.   | "                    |
| 16-S.       | Four-fifth mile above Lachine.  | "                    |
| 38-S.       | Lachine Cut, Upper Entrance.  | "                    |
| 48-S.       | East of Lightship No. 2.  | "                    |
| 53-S.       | Off Browns Point.   | "                    |
| 76-S.       | Between Light No. 2 and Light No. 3.                                  | "                    |
| 86-S.       | Between Top Light and Ile Perrot.                                     | "                    |
| 98-S.       | Windmill Point.   | "                    |
| 100-S.      | Entrance to Soulanges Canal, East.                                    | "                    |
| 102-S.      | Entrance to Soulanges Canal, East.                                    | "                    |
| 104-S.      | Soulanges Canal, East.  | "                    |
| 2-T.        | Brockville Narrows.   | "                    |
| 4-T.        | Hillcrest.  | "                    |
| 6-T.        | Cole Shoal, Middle Ground.  | "                    |
| 8-T.        | Fiddlers Elbow.   | "                    |
| 12-T.       | Gananoque Narrows.  | "                    |
| 38-T.       | Wolfe Island.   | "                    |
| 46-T.       | Cold Bath Shoal.  | "                    |
| 61-T.       | Penitentiary Shoal.   | "                    |
| 69-T.       | West end of Middle Ground, between Snake Island and Seven Acre Shoal. | "                    |
| 102-T.      | Northport Shoal.  | "                    |
| 110-T.      | Trenton.  | "                    |
| 6-U.        | Delaney Shoal.  | "                    |
| 8-U.        | Archibald Shoal.  | "                    |
| 40-U.       | Farran Point.   | "                    |
| 54-U.       | Prunner Shoal.  | "                    |
| 72-U.       | Jackass Shoal.  | "                    |
| 127-U.      | Dixon Island.   | "                    |
| 136-U.      | Upper Entrance, Iroquois Canal.                                       | "                    |
| 128-U.      | " " " "   | "                    |

## ONTARIO DIVISION.—LAKE ONTARIO—DISTRICT No. 7.

|   |          |               |
|---|----------|---------------|
| 1 | Niagara. | Gas and bell. |
|---|----------|---------------|

## LAKE ERIE—DISTRICT No. 8.

|   |  |      |
|---|--|------|
| 1 | Bar Point.                                     | Gas. |
| 2 | Grub Reef.                                     | "    |
| 5 | West Side Eastern Entrance, Bar Point Channel. | "    |
| 6 | East " " "                                     | "    |

## THAMES RIVER—DISTRICT No. 11.

|   |               |      |
|---|---------------|------|
| 1 | Thames River. | Gas. |
|---|---------------|------|

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ONTARIO DIVISION—*Con.**ST. CLAIR RIVER—DISTRICT No. 12.*

| Station No. | Name of Station. | Description of Buoy. |
|-------------|------------------|----------------------|
| 1           | Courtwright..... | Gas.                 |

*SARNIA—DISTRICT No. 13.*

|   |                    |      |
|---|--------------------|------|
| 1 | Point Edward ..... | Gas. |
|---|--------------------|------|

*SOUTHAMPTON—DISTRICT No. 15.*

|   |                            |      |
|---|----------------------------|------|
| 4 | Chantry Island, North..... | Gas. |
|---|----------------------------|------|

*GEORGIAN BAY—DISTRICT No. 16.*

|       |                         |                          |
|-------|-------------------------|--------------------------|
| 1-P.  | Vails Point .....       | Gas and bell.            |
| 2-P.  | Hooper Island.....      | Gas.                     |
| 3-P.  | Middle Ground.....      | "                        |
| 4-P.  | Three Star Shoal.....   | "                        |
| 5-P.  | Seguin Bank.....        | Gas and whistling.       |
| 6-P.  | Lone Rock .....         | " "                      |
| 7-P.  | Lockerbie Rock.....     | Gas.                     |
| 8-P.  | Surprise Shoal .....    | Gas, whistling and bell. |
| 10-P. | Kennedy Bank .....      | Gas.                     |
| 1-B.  | Maganatawan Ledges..... | Gas.                     |
| 2-K.  | Entrance Key Inlet..... | "                        |
| 8-K.  | Murray Bend, " .....    | "                        |
| 14-K. | Keefer Bend, " .....    | "                        |
| 20-K. | Digsby, " .....         | "                        |
| 24-K. | Mann Reef " .....       | "                        |
| 26-K. | Inside Reef, " .....    | "                        |

*STURGEON RIVER—DISTRICT No. 17.*

|      |                    |      |
|------|--------------------|------|
| 1-N. | Sturgeon Bar ..... | Gas. |
|------|--------------------|------|

*SAULT STE. MARIE—DISTRICT No. 18.*

|   |   |      |
|---|---|------|
| 1 | Vidal Shoal, North Side, Upper End..... | Gas. |
| 2 | " South Side, " .....                   | "    |
| 3 | " North Side, Lower End.....            | "    |
| 4 | Upper Entrance, South Side.....         | "    |
| 5 | " North Side.....                       | "    |

*PORT ARTHUR—DISTRICT No. 19.*

|   |  |      |
|---|--|------|
| 1 | Port Arthur.....                             | Gas. |
| 2 | Southeast Dredged Channel, Fort William..... | "    |
| 3 | Northeast " " .....                          | "    |

## BRITISH COLUMBIA DIVISION—DISTRICT No. 24.

| Station No. | Name of Station.                       | Description of Buoy. |
|-------------|--|----------------------|
| 1           | Lookout Island .....                   | Gas beacon.          |
| 2           | Kyuquot .....                          | Gas and whistling.   |
| 19          | San Juan .....                         | "                    |
| 23          | Lewis Reef .....                       | Gas beacon.          |
| 24          | Kelp Reef .....                        | "                    |
| 25          | Dock Island .....                      | "                    |
| 27          | Helen Point .....                      | "                    |
| 28          | Mary Ann Point .....                   | "                    |
| 29          | Walker Rock .....                      | "                    |
| 30          | Coffin Islet .....                     | "                    |
| 31          | Danger Reef .....                      | "                    |
| 32          | Joan Point .....                       | "                    |
| 33          | Gabrola Reef .....                     | "                    |
| 35          | Sand Head .....                        | Gas and whistling    |
| 36          | Grey Point .....                       | Gas and bell.        |
| 37          | First Narrows, Vancouver Harbour ..... | Gas beacon.          |
| 40          | Seechelt .....                         | "                    |
| 42          | Gallows Point, Nanaimo Harbour .....   | "                    |
| 43          | West Rocks .....                       | "                    |
| 44          | Goose Spit .....                       | "                    |
| 45          | Kelp Bar .....                         | Gas and bell.        |
| 47          | Oyster Bay .....                       | "                    |
| 49          | Lund .....                             | Gas beacon.          |
| 50          | Cortez Island .....                    | Gas and bell.        |
| 52          | Gillard Island .....                   | Gas beacon.          |
| 53          | Maud Island .....                      | "                    |
| 54          | Chatham Point .....                    | "                    |
| 56          | Helmickien Island .....                | "                    |
| 58          | Haddington Reef .....                  | Gas.                 |
| 60          | Crane Island .....                     | "                    |
| 64          | Zero Rock .....                        | Gas beacon.          |
| 67          | Fog Rocks .....                        | Gas and beacon.      |
| 69          | Camp Island .....                      | "                    |
| 70          | Dall Patch .....                       | Gas and whistling.   |
| 72          | Vancouver Rock .....                   | "                    |
| 74          | Boat Bluff .....                       | Gas beacon.          |
| 84          | Klewnuggit .....                       | "                    |
| 86          | Watson Rock .....                      | "                    |
| 88          | Marked Tree Bluff .....                | "                    |
| 89          | Holland Rock .....                     | "                    |
| 92          | Casey Point .....                      | Gas.                 |
| 93          | Georgia Rock .....                     | Gas and bell.        |
| 94          | Spire Ledge .....                      | Gas.                 |
| 95          | Barrett Rock .....                     | "                    |
| 96          | Coast Island .....                     | Gas beacon.          |
| 97          | Ridley Island .....                    | "                    |
| 101         | Alford Rock .....                      | Gas.                 |
| 103         | Hodgson Reef .....                     | Gas and whistling.   |
| 105         | Pointers .....                         | Gas beacon.          |
| 107         | Browning Entrance .....                | Gas and whistling.   |
| 110         | Skidegate or Lawn Point .....          | "                    |
| 111         | Low Island .....                       | Gas beacon.          |
| 112         | Copper Island .....                    | "                    |

The whole respectfully submitted,

J. G. MACPHAIL,

*B.A., B. Sc., A.M. Can. Soc. C.E., Commissioner.*

Commissioner of Lights Office,  
Department of Marine and Fisheries,  
Ottawa, April 1, 1911.



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## APPENDIX No. 3.

## RIVER ST. LAWRENCE SHIP CHANNEL.

OTTAWA, Ont., June 20, 1911.

The Deputy Minister, Marine and Fisheries,  
Ottawa, Ont.

DEAR SIR,—I have the honour to present the following annual report on the operations for the improvement of the River St. Lawrence ship channel during the fiscal year ending March 31, 1911.

I have very great pleasure in acknowledging that the success of the operations in a large measure is due to the skill and energy of the staff in charge, and also to the careful work of the officers and crews of the different vessels belonging to the ship channel fleet.

I have the honour to be, sir, yours obediently,

V. W. FORNERET, B.A.Sc.  
*Superintending Engineer.*

The ship channel of the River St. Lawrence, between Montreal and Father Point, has a total length of about 340 statute miles.

The contracted part of the river, which may properly be called 'ship channel,' commences at the Traverse, to which point from Montreal the distance is 220 miles.

The length of the channel actually requiring improvement by dredging from Montreal to the Traverse is about 70 miles. The length of the 30-foot channel actually completed at the close of navigation, 1910, is 64.05 miles, leaving 5.95 miles yet remaining to be dredged in order to give a clear depth of 30 feet at low tide during the lowest stage of the river level.

From Montreal to Batiscan the tide is not available for navigation, and in order to enable vessels to load to full depth the dredging of this part of the river was first undertaken, and is now completed.

The completed channel has a minimum width, in the straight portions, of 450 feet, and on the curves from 500 to 800 feet.

## HISTORY OF THE SHIP CHANNEL.

The St. Lawrence, owing to its situation, is the natural route from the Atlantic to the northern and northwestern half of the North American continent.

The opening of the Lachine canal, connecting Montreal with the Great Lakes, in 1825, established the route commercially.

The light-draught sailing vessels could then reach Montreal without trouble, except during a few weeks in the autumn, when they resorted to lightering.

In 1844, it was in an effort to give navigation up to Montreal for vessels of 500 tons, that the first work of dredging was undertaken.

The first proposals for improvements were discussed in 1825, the national character of the work being then recognized. Surveys were made and reported upon in 1831 and again in 1838.

In 1841, during an investigation, the committee proposed a tonnage duty sufficient to provide for the cost of the improved channel, which was considered would be

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less than that of lighterage. It was, however, agreed that 'in order to draw the produce of the west down the St. Lawrence, it was expedient to make the transit charges as light as possible.'

Operations were commenced by the 'Board of Works' in 1844 and continued until 1847 when, owing to opposition as to the location of the channel, the work was abandoned.

After 60 years it is now considered that the straight channel as commenced would have been preferable in many ways.

In 1850, the Harbour Commissioners of Montreal proposed that they could do the work more economically and expeditiously. They asked for authority to undertake the work and to charge a tonnage duty to pay for the 8 per cent interest and 2 per cent sinking fund.

This plan was adopted in August, 1850, and the commissioners were authorized to proceed in such a manner as they should deem best, the government plan being transferred to them.

The harbour commissioners after examination and the best advice obtainable, adopted the location of the deepest natural channel in Lake St. Peter. This results in the present channel with five tangents, instead of two long straight courses as at first commenced.

The original depth through Lake St. Peter was 10 feet 6 inches.

From 1850 the channel was deepened from stage to stage until in 1888, when the debt amounted to somewhat over three million dollars, the government decided to complete the channel as a national work, and to assume the debt, and from that day the channel has been open free to the commerce of the world.

At that date the channel had been deepened to 27½ feet at ordinary low water from Montreal to Cap à la Roche, and from there to Quebec the tide was available.

Nearly 20,000,000 cubic yards had been dredged at an average cost of about 20 cents per yard, including the cost of the plant.

A dredge of the type of 1846, excavated in Lake St. Peter in one day, 1,200 cubic yards. By wonderful improvements in 1888, a dredge of that time could make 7,200 yards without trouble. At the present time, working day and night, the Lake St. Peter dredge removes at a fairly average rate 20,000 cubic yards per day.

The work was then conducted by the Department of Public Works of Canada from 1889 until 1904, when the management and control of the river, together with the shops and dredges, were handed over to the Department of Marine and Fisheries, which department had general charge of navigation.

At the present time a splendid channel of 30 feet at extreme low water exists from Montreal to Cap à la Roche, and to Quebec by taking advantage of the tide.

The success of the work is in a great measure due to the geographical situation of the route, the physical features of the river favourable for improvement, the determination and public spirit of the business men and industrial corporations of Montreal, and to the recognition by the government of Canada of the national character of the project.

#### THE PRESENT PROJECT.

The present project for a 30-foot channel between Montreal and Quebec was adopted in 1889, while the improvements below Quebec were decided upon in 1906.

The estimate of 1899 was for ten years work. The plant was only partially available until 1903.

The project for the channel between Montreal and Quebec had in view a channel of 30 feet depth, at the extreme low water of 1897, from Montreal to tide water at Batiscan, and from Batiscan to Quebec at extreme low tide. The width contemplated was a minimum of 450 feet in the straight portions and from 550 to 750 feet at the bends. An anchorage was to be provided for Lake St. Peter.

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Of this work, the 30 foot channel from Montreal to tide water at Batiscan was completed in 1906. This is now in use, deep draught vessels in the autumn waiting for tide, to pass Cap à la Roche and St. Augustin bar.

The work remaining to be done is about  $1\frac{1}{2}$  miles of shale rock at Cap à la Roche; about  $\frac{3}{4}$  of a mile at Grondines; about 1 mile at St. Augustin bar; also about 1 mile of widening at Ste. Croix.

Cap à la Roche will probably take from two to three years to complete, while the remainder to Quebec should be completed at the same time, or in one year longer.

The project of work below Quebec, had in view a 30-foot channel at low tide at St. Thomas Flats, and at Beaujeu Bank, everywhere 1,000 feet wide.

The Beaujeu bank channel was completed in 1909 and widened in 1910.

The St. Thomas channel where the material is clay and sand is expected to be finished in 1911.

## ACCIDENTS IN 1910.

*River St. Lawrence Ship Channel between Montreal and Father Point.*

Only one accident of any importance took place in the ship channel during the season of 1910. This occurred on May 10 when the steamship *Grampian*, of the Allan line, inward bound from Glasgow to Montreal, went aground on the north bank of the channel at Cap à la Roche during a sudden storm which obliterated all marks. She floated at high tide and proceeded under her own steam to Montreal. The bottom was found to be damaged and the steamship had to go into dry dock for repairs.

An unusual accident happened in Montreal harbour. This was the sinking of two sand barges in the old channel. The barges were being towed up when the tow-line suddenly parted, and the barges collided and damaged themselves to such an extent that they sank immediately. During the winter the wrecks were cleared away.

The following are the few minor accidents which happened in the channel:—

May 30.—SS. *Crown of Castile* touched slightly on south bank between buoys 91 and 95, at Cap à la Roche.

July 11.—SS. *Stigstad* touched slightly on edge of bank, Cap à la Roche. No damage.

September 23.—C.P.R. SS. *Montcalm* and Dominion Coal SS. *Kron Prinz Olaf* collided at Channel Patch. Both boats were somewhat damaged.

November 6.—Canada line SS. *Prince Adalbert* while manœuvring to turn around near Vercheres, P.Q., collided with a barge which was being towed up river, damaging the latter slightly.

## MARINE SIGNAL SERVICE.

*River St. Lawrence Ship Channel.*

There are twelve stations established at the following places:—

| Locality.                   | Distance in<br>nautical miles<br>from Montreal. | In operation.    |
|-----------------------------|---|------------------|
| Montreal.....               | 00  | Day and night.   |
| Longue Pointe.....          | 5   | "                |
| Vercheres.....              | 19  | During daylight. |
| Sorel.....                  | 39  | Day and night.   |
| Three Rivers.....           | 71  | "                |
| Batiscan.....               | 87  | During daylight. |
| St. Jean des Chaillons..... | 93  | Day and night.   |
| Portneuf.....               | 108   | During daylight. |
| St. Nicolas.....            | 127   | Day and night.   |
| Bridge.....                 | 133   | During daylight. |
| Quebec.....                 | 139   | Day and night.   |
| Crane Island.....           | 171   | "                |



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The above stations are connected by a private through telephone system, terminating at Quebec and Montreal, with the exception of Crane island, which communicates with Quebec *via* the Bell Telephone Company's system.

Each station has a mast 60 feet in height with a cross spar 20 feet long about 20 feet from the top of the mast.

When a station is in operation a 'Jack' is hoisted to the mast-head during daylight and a white light at night.

Signals displayed at west end of cross spar indicate river or points above station.

Signals displayed at east end of cross spar indicate river or points below station.

For other communications between vessels and stations or vice versa, the International Code of Signals is used.

The telephone service was started September 1, 1907 and the system of signals on November 5, 1908.

The combined service of telephone and signals has proved to be very useful, weather conditions being reported from the different stations along the river. The whereabouts of vessels can also be obtained.

Owing to its promptness, the service has been of great value in connection with the dredging operations, as in the event of breakages, &c., communication can immediately be obtained with the shops at Sorel, and orders can then be given for repairs, thereby saving a great deal of valuable time.

The stations were kept in good repair during the past season and some minor improvements were made to some of them.

As the Cap Rouge station was not considered to be in a very suitable position for reporting ice-conditions in connection with the ice-breaking operations, a much better point was found just above the Quebec bridge site on the south shore about a mile below the Cap Rouge station.

The signal station at Cap Rouge was situated in a private residence, therefore it was necessary to provide a building for the new site, which was called 'Bridge Station.' The original signal station at Vercheres being no longer needed since the old Windmill was restored for use as a station, it was towed down last autumn to Bridge Station on a scow, and placed in position at that point.

The advisability of this change was proved during the past winter, as more accurate reports were obtained about the ice-conditions on the river, and when a jam occurred it was reported promptly to the captains of the ice-breakers at Quebec, who lost no time in proceeding to the locality to break it up.

OTTAWA, May 2, 1911.

A. JOHNSTON, Esq.,

Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I beg to respectfully submit Mr. N. B. McLean's report on the ice-breaking operations between Quebec and Montreal during the winter of 1910-11.

It will be noted that the St. Lawrence ice-conditions during the past winter were most severe, but notwithstanding this fact the results obtained were very satisfactory.

Although the opening of navigation was not hastened as much as the previous season, the prevention of floods in the low lying districts was successfully accomplished, thereby saving the inhabitants much suffering and loss of property.

It is generally admitted that had the ice-breakers not been in operation during the winter, conditions indicated that disastrous floods would have occurred in the spring.

The usefulness of the ice-breakers was again proved when owing to an accumulation of ice below the foot of the Soulanges canal, vessels from above were prevented

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from passing down. On the department being notified the *Lady Grey* was ordered to proceed immediately to Soulanges.

The ice-breaker arrived there at 11 a.m. on May 2, and commenced breaking up the jam.

The ice was found to be from 20 to 40 feet in thickness in some places and composed mainly of frazil.

After several hours of strenuous work the *Lady Grey* succeeded in cutting her way through, thereby allowing six large lake steamers which were held up, to pass down. Had the ice-breaker not been available there is no doubt that these vessels would have been delayed for several days longer.

The successful work accomplished during the winter by the two ice-breakers, *Lady Grey* and *Montcalm* is a credit to Mr. N. B. McLean, assistant engineer, who was in direct charge of these operations, and to the officers and crews of these steamers.

I am, sir,

Yours obediently,

V. W. FORNERET,  
*Superintending Engineer.*

SOREL, May 1, 1911.

SIR,—I have the honour to submit the following report on the work of the ice-breakers *Lady Grey* and *Montcalm* during the winter of 1910-11.

The season just closed was one of the most severe for many years, not only was it extremely cold, but it was also of long duration, beginning early in December and continuing well on into April. The meteorological observations taken at McGill observatory, Montreal, show that the mean temperature for the winter was considerably below the mean temperature for the last 37 years, and that the percentage of possible sunshine was also very low. This lack of sunshine, coupled with low temperature, is important, as ice and frazil is much more rapidly formed on cloudy days than on days when the sun is shining.

The ice-bridge formed at Three Rivers on December 8, and by December 15 the river was covered with ice from this point to Montreal.

The close of the winter of 1910-11 marks the third season's serious ice-breaking operations in the River St. Lawrence between Quebec and Montreal.

In 1908-9 the *Montcalm* worked alone, and the ice-bridge at Cap Rouge was allowed to form before operations were begun. The following year the system was changed, and two ships, the *Montcalm* and *Lady Grey*, were employed in place of one. The intention was to keep Cap Rouge open if possible, as it was generally conceded that with this point clear the river would remain free of ice for a considerable distance above. This attempt proved successful and the river remained open to Three Rivers.

The plan of operation that was followed in 1909-10 having been satisfactory, the same system was continued this year, the *Montcalm* and *Lady Grey* patrolling the river on alternate days between Quebec and St. Nicholas, with both ships always ready for an emergency.

No difficulty was experienced in keeping Cap Rouge open all winter, though several heavy jams and two or three minor ones occurred.

On January 17 the ice blocked at Batiscan. Previous to this date the river had been open from Quebec to Three Rivers. Following this, on January 21, a jam occurred at Grondines, and on the 23rd another at Portneuf. In a very short time these jams had assumed serious proportions. The river was covered with ice in three

days from Batiscan almost to Three Rivers. At Portneuf by January 29, the ice had backed up to the Richelieu rapids, and the blockade was four miles long. The Grondines jam had also considerably increased in size.

From January 26 to 28, inclusive, the *Lady Grey* made three attempts to reach Portneuf, but owing to heavy snowstorms was not able to pass St. Nicholas, and it was only on January 29 that it was possible to get through.

It was found that the jam there was about four miles long, much heavier than was expected, the lower end being about half a mile above Platon wharf and the upper end slightly below the light on Richelieu island.

After six and a quarter hours' work, when it was time for the ship to return to Quebec, about two miles advance had been made, leaving two miles more to be cut through before arriving at the open water at the foot of the Richelieu rapids.

Owing to adverse weather conditions on January 30 and 31 it was impossible to continue the work at Portneuf, and after the latter date the *Lady Grey* had to be on duty at Quebec, as the *Montcalm* was leaving for a trip to Seven islands.

Very serious floods were likely to follow as the result of the river being blocked from Portneuf upwards, so it was decided that the work of opening the upper reaches should be commenced immediately after the return of the *Montcalm*.

The *Montcalm* returned from Seven Islands on February 12, but owing to bad weather and heavy ice the *Lady Grey* was not able to proceed up the river till February 15. On this date the work of breaking up the ice began abreast of Platon wharf.

It was found that this jam was a much more serious proposition than it was on January 29, and that it consisted in the main of a heavy bank of frazil, the most difficult of all ice to break up. This bank was a mile to a mile and one-half in length by a half to three-quarters of a mile in width, and was situated in the bend opposite Portneuf. The same formation was found at this point in the spring of 1909. After a great deal of difficulty this mass of frazil was cut free on all sides, but even then it would not move. This was difficult to understand for a moment, but there could be only one explanation, it was grounded, and grounded where the chart showed from 60 to 80 feet of water. To get rid of it it was necessary to break it up little by little, and it was February 23 before it was finally disposed of. Large numbers of the smaller pieces broken off from the main bank were strung out and stranded as far down as St. Antoine, and there was a great number of these in and near the Cap Santé-Ste. Croix channel; in fact, so numerous were they that there was danger of a jam being formed and they had to be cleared out. These small icebergs stood from 12 to 15 feet out of water at low tide. After the last of the heavy frazil ice had been sent down on February 23, the cut was carried up stream through ice from 1 to 3 feet thick, with here and there heavy ridges of packed ice and frazil, and on February 27 the *Lady Grey* cut through into open water at the foot of the Richelieu rapids, about one-quarter of a mile above Richelieu island light.

This five mile stretch from Platon wharf to the Richelieu marked the first stage in the operations of opening to river to Montreal, and twelve days was required to do the work, giving a rate of advance per day of not quite half a mile. This was by far the heaviest and most difficult work executed by the ice-breakers during the season.

The open water extended from one-quarter of a mile above Richelieu island light to about half a mile below Langlois light, a distance of five miles. At this point on March 2 the *Lady Grey* began the second stage of the operations. Work was carried on steadily and by March 9, the head of the cut had been pushed to about 1 mile above Cap à la Roche curve, and the second stage of the operations,  $8\frac{3}{4}$  miles in length was completed, seven days being required for the work, giving an average rate of advance per day of  $1\frac{1}{4}$  miles. The ice broken on this stretch varied from one to three feet in thickness with occasional ridges and pockets of packed ice and frazil.

At this point the *Lady Grey* returned to Quebec for coal and general supplies, and was replaced by the *Montcalm*.



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It must be understood, that the work of cutting up stream could not be carried ahead continuously without interruption, for there were numerous delays from various causes. It was necessary to return to Quebec from time to time for coal; the work was interrupted by fog and snow; battures broke away on either side and the ship had to drop back so as not to be cut off, and very frequently had to re-clear the channel; as the cut was pushed ahead the narrow channel had to be widened to as great a width as possible.

The third stage of the operations from above Cap à la Roche curve to Three Rivers, a distance of 24½ miles, was completed in seven days, the *Lady Grey* arriving at latter place on March 16, making an average advance per day of practically 3½ miles.

It was the intention to operate the *Montcalm* and *Lady Grey* together from above Cap à la Roche, but unfortunately, this was only possible for one day on the stretch to Three Rivers, as the *Montcalm* broke two propeller blades and had to return to Quebec for repairs. On the day the two ships were able to work side by side 6 miles of channel was opened. The best day's work for one ice-breaker was 4½ miles and the least was about 2 miles. The ice between Cap à la Roche and Three Rivers averaged pretty well from 12 to 20 inches with occasional pockets of packed ice and frazil.

From March 17 to 19, inclusive, widening was carried on between Cap à la Roche and Three Rivers. When this was completed the channel between these two points was nowhere less than 1,500 feet wide and in many places 2,000 feet or more.

The *Montcalm* arrived back from Quebec on March 18, having completed the repairs to her propellers.

On the morning of March 20, the work of cutting up stream began once more, the *Montcalm* and the *Lady Grey* working side by side. On this stretch the cut was pushed ahead rapidly, as the two ships were able to work together a good part of the time, and on March 29 the *Montcalm* arrived at Sorel.

The channel between Three Rivers and Sorel, a distance of 37 miles, was opened in ten days, giving an average rate per day of 3¾ miles. The *Lady Grey* was absent four days out of the ten, breaking up jams that had formed below Three Rivers. The ice broken varied from 18 to 26 inches in thickness with some packed ice and frazil in the Sorel islands.

Widening operations were carried on wherever possible between Pte. au Bigot and Sorel from March 30 to April 6, inclusive. Below Three Rivers the least width of channel was 1,800 feet at Becancourt bend, after this widening was completed, and above Three Rivers to the foot of the lake the river was cleared of ice nearly to summer width, the channel through the lake and the Sorel islands was opened to its full width, and from the islands to Sorel there was nowhere less than 1,500 feet.

On April 7 and 8, the two ships were engaged cutting up stream again, and on the latter date had arrived opposite Lanoraie, 8¼ miles above Sorel. The ice on this stretch, even at this late date, was very heavy there being a great deal of packed ice and frazil.

The next day, April 9, a jam occurred at the foot of the lake. This indicated that the ice was growing weak, so it was decided, that it was unsafe to push the cut any further up above Sorel till the lake should be clear.

The lake was considered to be the fifth stage of the operations, and perhaps the most important of all, for there can be no question of navigation to Montreal, as long as there is ice in Lake St. Peter.

With Lake St. Peter free of ice, and if the river above is not clear, work can be carried on with perfect safety; on the other hand should a general shove occur in the lake and the ice-breaker caught above it, its usefulness is practically finished for that season for it will not be possible for the ship to cut her way down stream through the many miles that would intervene between her and Nicolet Traverse, and the ice must pass out, as it has done in former years, aided only by nature.

Before ice-breakers were brought into use the lake ice did not move till the warm waters from the rivers to the south had practically cut a channel along the south side, and the old rule was, that six or seven days must elapse after the Richelieu river was clear of ice before any movement took place in the lake.

Lake St. Peter is roughly 21 miles long by 7 miles wide with an area of about 140 square miles. This 140 square miles of ice must pass out at the lower end through a channel  $1\frac{1}{2}$  miles wide. With the aid of ice-breakers this can be worked through in about three days, but if left to nature, it required considerably longer.

A plan of operations for the work in the lake had been decided upon, based on three year's experience and on information of a general character gathered from various sources. This plan was strictly adhered to in spite of a great deal of adverse criticism.

Professor H. T. Barnes, F.R.S., of McGill University, has demonstrated by the aid of his delicate electric thermometer, that directly the ice has been cleared from a section of channel the water in that section immediately begins to absorb heat from the sun. It was the intention to apply that heat to aid and expedite if possible the clearing of Lake St. Peter of ice. For that reason the channel above the lake was opened as far up as the time permitted, in this case only to Lanoraie. Had more time been available the work would have been pushed further up stream. As had been noted several times before, the current sets pretty well across from Ile aux Raisins Traverse to Nicolet pier. It was hoped that the heat absorbed by the water would be given up in cutting the ice between these two points.

From April 12 to April 15, the *Lady Grey* was engaged widening from Nicolet Traverse to No. 2 Curve, and this portion of the lake was cleared out much wider than had ever been done before. At the Traverse the opening was  $1\frac{1}{2}$  mile wide, gradually getting narrower till at the white buoy curve it was about three-quarters of a mile in width, and decreasing again to No. 2 curve, where it was a quarter of a mile wide.

When the *Lady Grey* arrived at Nicolet on Sunday, April 16, it was found that there had been a general movement of the lake ice during the night, and by April 19, after three days hard work, the whole of the central portion of the lake was clear. A good deal of ice still remained on the north and south sides.

The next day, April 20, a general inspection was made from end to end of the lake, and it was found that the ice on the north side was so honeycombed that no further trouble in the way of jamming need be anticipated from it.

As before stated, the old rule concerning the movement of the lake ice when nature was allowed to take its course, was that it occurred only six to seven days after the Richelieu river was clear.

The Richelieu this year was free on the afternoon of Monday, April 17, consequently the lake was due to move about Sunday, April 23.

Instead of that, however, the lake moved on April 16, one day before the Richelieu was clear, and was itself practically clear on April 19, three days before it should have moved under old conditions.

The ice broke across pretty well from Ile aux Raisins to Nicolet, as was hoped; so all things considered, the plan of operations would seem to have been fairly well justified.

Work was carried on in the Sorel islands for two days breaking up jams and generally keeping the ice moving, and on April 23 the *Lady Grey* entered upon the final stage of the operations. The river was practically clear of ice from Sorel to the foot of the Contrecoeur Traverse, and above this point there was ice everywhere, but it had shoved to some extent. No great difficulty was experienced in cutting through this, and the ship proceeded up stream as far as Cap St. Michel, where another stretch of open water was found. From this point a return was made to Sorel. During the night all this ice passed out, and next morning the open water extended up to Ile aux Vaches low light. Work began here, and during the day two miles

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of channel was opened through very heavy packed ice with frazil, the head of the cut at night being abreast of Pte aux Trembles wharf. On April 25 about three miles of ice remained to be broken up before the open water below Longue Pointe could be reached. This stretch presented some difficulties, as it was entirely frazil ice solid to the bottom. However, by 4.50 p.m. the channel had all been cleared, and at 5.40 p.m. the *Lady Grey* arrived at Montreal, bringing to a close the hardest and most difficult season's work that has yet been experienced.

As has been stated in the previous report, the results to be obtained by keeping the river open in winter from Quebec to Batiscan or Three Rivers may be divided into three heads:—

- (1) Prevention of floods.
- (2) Earlier navigation to Montreal.
- (3) A longer season for dredging operations.

The first result has been obtained, as there have been no floods since serious ice-breaking operations were undertaken. The second and third results also have unquestionably been obtained, though it is impossible to state how much sooner the river has been clear of ice than it would have been if left entirely to nature. The fact that Lake St. Peter was clear three days before it was due to move according to the old rule, shows at least that some gain has been made in this direction.

From the experience gained this year I am of the opinion that the river can be kept open from Quebec to Three Rivers, even should the weather be again as severe as it was last winter.

Eighty-five and one-half miles of channel were cut by the ice-breakers. This represents channel that was actually 'bucked' out, and does not include open water, stretches of channel that were easily cleared by running up and down once or twice, nor jams that had to be recleared. Eighty-five and one-half miles in seventy days gives an average rate of advance of  $1\frac{1}{2}$  miles per day, including all delays. As a result of the work, 125 miles of channel was opened.

Working in fair average ice the *Lady Grey* delivers a blow every three minutes, and the *Montcalm* one every four and one-half minutes, being rather slower in manœuvring. This gives some idea what the hull and machinery of the ice-breakers have to stand.

I have again to comment most favourably on the creditable manner in which Captains Mercier and Pelletier carried out their work throughout the winter.

I have the honour to be, sir,

Your obedient servant.

N. B. McLEAN,

V. W. FORNERET, Esq., C.E.,  
Superintending Engineer,  
River St. Lawrence Ship Channel,  
Department of Marine and Fisheries,  
Sorel.

## GENERAL INFORMATION.

A feature of the season was the inauguration of the Canadian Northern Steamship line with two vessels of high speed. Under the name of the 'Royal Line' they maintained throughout the season a fortnightly service between Montreal and Bristol. These ships are the first ocean-going vessels to sail under the Canadian flag and are named *Royal Edward* and *Royal George*.

During the course of the sweeping of the channel in 1910, no obstruction of any serious nature was found. Two or three vessels were reported to have touched above Quebec, but the most careful examination failed to reveal anything in the channel.



2 GEORGE V., A. 1912

Two semaphores, indicating the channel depths in their respective localities, were maintained as usual, the one at St. Jean des Chaillons for the depth in the Cap à la Roche dredged cut was put in operation on May 2, and the other at St. Nicholas showing the depth over the undredged St. Augustin bar, on May 24, 1910.

The annual trip of inspection of the river St. Lawrence Ship Channel from Montreal to Crane island, was made by the Honourable the Minister on October 6, 1910.

The steamer *Lady Grey* left Victoria pier, Montreal at 9.30 a.m., and the inspection occupied three days during which the various works between Montreal and Crane island below Quebec were visited. The minister, the Honourable Mr. Brodeur, was accompanied by his officials, representatives of the Shipping Federation of Canada, Montreal Board of Trade, La Chambre de Commerce, Montreal and Quebec Harbour Commissioners and the Montreal and Quebec Pilots.

The progress of the work at the different points gave satisfaction.

Much interest was shown in the experimental rock-cutter working at Cap à la Roche which was making good progress.

As it was uncertain what success would be obtained with this machine, it had been decided to utilize the hull and as much of the machinery as possible of the new stone-lifter under construction at the Sorel shipyard. Therefore, it had been only necessary to purchase a rock-cutter ram, and hoisting winch, which was obtained from Messrs. Lobnitz & Company, Renfrew, Scotland, the weight of the ram being 20 tons.

After the installation on the stone-lifter was completed, the machine was started to work at Cap Charles, in the Cap à la Roche section of the channel, where the shale rock is very hard, and it was soon found that the rock-cutter could break up this rock without difficulty. It took an average of five blows to penetrate three feet, the penetrations being five feet apart. The broken rock was found to be of convenient size for dredging.

Results proved that after the rock-cutter had gone over the ground, the dredge could remove about 75 per cent more material in the same given time, than it could before the rock was broken.

In addition to the large amount removed the strain on the dredge is very much less, and therefore fewer repairs are necessary, and less time lost.

The results obtained during the season of 1910 were so satisfactory that a complete machine was ordered from Messrs. Lobnitz & Company. As it was found that the 50 foot ram would be too short for the 35 foot channel, owing to the high tides, a longer one has been ordered and weighing 22 tons. This will make the new rock-cutter suitable for work on the 35 foot channel. It is expected that this machine will be ready for next season.

The Cap Levard channel was completed before the end of the season. It is now 450 feet wide, and deepened to 30 feet at L.W. of 1897. Formerly this channel was only 300 feet in width, and 27½ feet deep at ordinary low water.

Lights were constructed on the new axis of the channel.

The thirty-foot channel is now completed to the Upper end of Cap à la Roche channel, a distance of 107½ miles from Montreal.

Some progress has been made during the last season in connection with the 35 foot dredging. Dredge No. 7 having deepened a distance of three miles on Lake St. Peter to 35 feet at L.W. of 1897. The material however, is much harder at that depth.

When the proposed additional plant to be constructed for the 35 foot project, is completed, rapid progress should be made.

As the proposed floating dry-dock to be built for Montreal harbour would be of large public utility and a great aid to navigation on the St. Lawrence, and owing to the fact that the floating dock basin to be built by the Montreal Harbour Commissioners, was at some little distance from the main channel, the Department of Marine and Fisheries agreed to dredge an approach to dry-dock. Dredging was commenced

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at the beginning of the season, and good progress was made. It is expected that this channel approach will be completed by the end of next season, to a depth of 30 feet at L.W. of 1897, and to a minimum width of 750 feet.

The total cost from 1851 to the close of the fiscal year, of the ship channel, including plant, shops, surveys, &c., is as follows:—

|                                    |                 |
|------------------------------------|-----------------|
| Dredging. . . . .                  | \$8,358,332 23  |
| Plant, shops, surveys, &c. . . . . | 3,756,770 41    |
| Total. . . . .                     | \$12,115,102 64 |

The total number of cubic yards dredged amounted to 73,721,627 the material varying from very hard shale rock to soft blue clay.

| Year.     | AVERAGE DEPTH FOR EACH MONTH<br>IN THE 27½ FOOT CHANNEL.<br>(27½ feet at Ordinary Low Water.) |          |          |          |          |          |          | FROM<br>SOREL GAUGE<br>DURING<br>EACH YEAR MAY<br>TO NOVEMBER |          |
|-----------|---|----------|----------|----------|----------|----------|----------|---|----------|
|           | May.  | June.    | July.    | August.  | Sept.    | Oct.     | Nov.     | Highest.  | Lowest.  |
|           | Ft. Ins.  | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins.  | Ft. Ins. |
| 1890..... | 35 6  | 35 3     | 31 9     | 30 6     | 30 9     | 29 9     | 30 6     | 37 0  | 29 0     |
| 1891..... | 34 6  | 31 3     | 29 9     | 29 9     | 30 0     | 28 3     | 28 3     | 36 9  | 27 3     |
| 1892..... | 31 0  | 31 9     | 31 6     | 30 6     | 28 9     | 28 3     | 28 3     | 33 6  | 27 3     |
| 1893..... | 36 0  | 34 3     | 30 9     | 29 9     | 29 6     | 28 6     | 28 0     | 37 6  | 27 6     |
| 1894..... | 34 6  | 31 9     | 31 0     | 29 2     | 28 3     | 28 9     | 29 0     | 36 0  | 27 7     |
| 1895..... | 33 3  | 31 3     | 28 3     | 28 3     | 27 6     | 26 9     | 26 9     | 34 6  | 25 10    |
| 1896..... | 33 6  | 30 6     | 28 9     | 28 0     | 27 6     | 27 9     | 29 0     | 37 0  | 27 4     |
| 1897..... | 35 6  | 32 6     | 30 3     | 29 3     | 28 0     | 27 0     | 27 6     | 37 0  | 26 5     |
| 1898..... | 31 6  | 30 9     | 29 8     | 28 2     | 28 2     | 28 3     | 28 6     | 32 1  | 26 9     |
| 1899..... | 36 2  | 31 9     | 30 3     | 28 6     | 27 6     | 28 0     | 27 9     | 37 9  | 27 9     |
| 1900..... | 33 6  | 30 9     | 30 6     | 29 6     | 28 1     | 28 9     | 29 2     | 35 9  | 27 4     |
| 1901..... | 34 3  | 31 10    | 29 2     | 28 3     | 27 7     | 27 4     | 27 3     | 36 3  | 26 6     |
| 1902..... | 32 2  | 32 2     | 32 2     | 29 4     | 28 1     | 28 1     | 29 0     | 34 1  | 27 6     |
| 1903..... | 33 0  | 30 11    | 30 5     | 29 5     | 28 4     | 28 0     | 27 11    | 32 8  | 26 11    |
| 1904..... | 36 3  | 34 5     | 30 9     | 29 5     | 29 5     | 30 4     | 29 3     | 37 4  | 28 1     |
| 1905..... | 31 10   | 30 8     | 29 7     | 29 0     | 28 0     | 28 5     | 28 1     | 33 6  | 27 1     |
| 1906..... | 32 4  | 31 5     | 29 3     | 27 11    | 27 3     | 27 4     | 27 6     | 33 3  | 26 9     |

| Year.     | AVERAGE DEPTH FOR EACH MONTH<br>IN THE 30 FOOT CHANNEL<br>(30 feet at the extreme L. W. of 1897.) |          |          |          |          |          |          | FROM<br>SOREL GAUGE<br>DURING<br>EACH YEAR MAY<br>TO NOVEMBER. |          |
|-----------|---|----------|----------|----------|----------|----------|----------|--|----------|
|           | May.  | June.    | July.    | August.  | Sept.    | Oct.     | Nov.     | Highest.   | Lowest.  |
|           | Ft. Ins.  | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins. | Ft. Ins.   | Ft. Ins. |
| 1907..... | 37 1  | 35 9     | 34 3     | 32 10    | 32 4     | 32 9     | 33 7     | 34 3   | 31 10    |
| 1908..... | 41 5  | 37 10    | 33 10    | 32 10    | 32 0     | 31 0     | 30 6     | 42 4   | 30 0     |
| 1909..... | 40 6  | 37 6     | 33 10    | 33 2     | 32 7     | 32 4     | 31 6     | 42 7   | 30 11    |
| 1910..... | 35 7  | 34 5     | 32 3     | 31 7     | 31 6     | 31 6     | 31 7     | 37 1   | 30 7     |

## COST OF SHIP CHANNEL TO DATE.

TABLE showing the total cost of dredging and plant and the quantities dredged to March 31, 1911.

|   | Cost of<br>Dredging. | Expenditure<br>for Plant, Shops,<br>Surveys, &c. | Quantities<br>Dredged. |
|---|----------------------|--|------------------------|
|   | \$ cts.              | \$ cts.  | Cubic Yards            |
| MONTREAL HARBOUR COMMISSIONERS, 1851 TO 1888.   |                      |  |                        |
| Dredging Montreal to Cap à la Roche to 27½ feet at ordinary low water, and from Cap à la Roche to Quebec to 27½ feet at half tide. ....   | 3,402,494 35         | 534,809 65                                       | 19,865,693             |
| DEPARTMENT OF PUBLIC WORKS.   |                      |  |                        |
| Dredging, consisting of widening and cleaning up of channel: deepening Cap à la Roche to Cap Charles to 27½ feet at ordinary low water, and dredging at Grondines, Lotbinière and Ste. Croix, 1889 to June 30, 1899. .... | 829,583 08           | 486,971 79                                       | 3,558,733              |
| Project of 1899:—   |                      |  |                        |
| Dredging channel between Montreal and Quebec to 30 feet at lowest water of 1897, also widening to a minimum width of 450 feet, and straightening.   |                      |  |                        |
| Fiscal year 1899-1900. ....   | 100,191 01           | 265,270 78                                       | 1,107,894              |
| " 1900-1901. ....   | 136,680 83           | 287,040 04                                       | 2,479,385              |
| " 1901-1902. ....   | 185,429 80           | 479,731 47                                       | 3,098,350              |
| " 1902-1903. ....   | 255,776 55           | 277,703 50                                       | 6,544,605              |
| " 1903-1904. ....   | 276,958 59           | 308,765 44                                       | 4,619,260              |
| DEPARTMENT OF MARINE AND FISHERIES.   |                      |  |                        |
| This includes the work below Quebec.  |                      |  |                        |
| Fiscal year 1904-1905. ....   | 311,087 93           | 266,460 33                                       | 2,716,220              |
| " 1905-1906. ....   | 431,768 30           | 125,107 37                                       | 4,047,530              |
| " 1906-1907, (July 1, '06 to March 31, '07). ....   | 302,677 37           | 80,613 26  | 3,001,010              |
| " 1907-1908. ....   | 478,209 66           | 179,339 78                                       | 4,831,875              |
| " 1908-1909. ....   | 497,686 03           | 209,636 55                                       | 5,896,737              |
| " 1909-1910. ....   | 572,950 71           | 117,072 64                                       | 6,354,285              |
| " 1910-1911. ....   | 576,838 02           | 138,247 81                                       | 5,600,050              |
|   | 8,358,332 23         | 3,756,770 41                                     | 73,721,627             |

## DREDGES.

*Elevator Dredge Laval* (No. 1).—This is the oldest dredge in the ship channel fleet. The hull is of wood, constructed in Ottawa in 1894. This dredge is provided with cast-steel buckets for work in rock and other hard material.

During the winter of 1909-10, repairs were made to the buckets, the machinery was given a general overhauling, the upper tumbler was replaced by a new one, and the boilers were given a thorough inspection and cleaning up.

The breaking up of the St. Lawrence river ice occurred much earlier than usual and as repairs to the dredges were completed, it enabled the fleet to start out much sooner.

The details of the operations for the fiscal year beginning April 1, 1910, were as follows:—

Dredge No. 1 left Sorel for Point-aux-Trembles (en-haut) on April 18, arriving at her destination the same day. The following morning she was laid out to clean



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up some lumps found by the testing scow in the Point-aux-Trembles channel, the material being black sand and soft clay. This work occupied only a few days.

As the department had agreed to dredge out the channel approach to the proposed floating dock at Maisonneuve, Montreal harbour, *No. 1* was brought up from Point-aux-Trembles and laid out to work on the approach on April 25. This channel was to be dredged to 30 feet at L.W. of 1897 and the material consisted of hard-pan and clay. The *Laval* continued to work here until June 14, when, (the water having subsided sufficiently to enable the dredge to work at Cap Levrard without losing time at high tide on account of her short bucket frame) she was taken down and laid out to finish dredging the new Cap Levrard channel to 30 feet at L.W. of 1897. The material was very hard and difficult to dredge, being hard-pan, clay and stones.

After the cut was completed the dredge did some cleaning up of lumps found by the testing scow. All was finished by September 12, and the channel was found to be clear of all obstructions by the testing scow. The Cap Levrard channel was then officially opened for navigation to a width of 450 feet and 30 feet in depth at low water of 1897. This is considered a much needed improvement by the shipping interests.

Dredge *No. 1* was then taken up to Batiscan curve on September 13 to clean up a few sand bars found by the testing scow. This was completed on October 4 and *No. 1* was moved up to Pointe Citrouille, Champlain channel, to clean up a few sand bars also found by the testing scow. As soon as this was done on October 14, the dredge was taken up to work in Montreal harbour where she left off in the early part of the season on the floating dock channel approach and continued there until taken to Sorel on November 25, to go into winter quarters.

In a total of 188 days during which *No. 1* was at work, her machinery was in actual operation 69 per cent of the full working time.

The total number of cubic yards removed amounted to 309,150 at a total cost of \$52,156.67 or 16 $\frac{87}{100}$  cents per cubic yard.

*Elevator dredge Laurier (No 2).*—The hull of this dredge is also of wood, having been constructed at the government shipyard at Sorel in 1897. *No. 2* is equipped with a set of cast steel buckets especially designed for rock and other hard material.

During the winter of 1909-10, general repairs were made to buckets, chute, machinery and boilers. The 'A' frame and bow crane were strengthened. The bucket frame was also overhauled and stiffened up by extra bracing.

The details of the operations of this dredge for the fiscal year beginning April 1, 1910, were as follows:—

Everything being in order for work, dredge *No. 2* left Sorel for Varennes curve on April 11. This was an unusually early date, in fact the earliest on record.

*No. 2* was laid out on the curve to deepen the channel to 35 feet at low water of 1897 and also widen it, the material being clay.

The dredge continued to work at this place until the conditions at Cap à la Roche were such that it could work to advantage at that point. She was then taken down on April 23 and laid out on Cap à la Roche curve where she left off the previous season, the material to be dredged being solid shale rock.

*No. 2* continued in operation at Cap à la Roche until November 11, and left for Varennes on November 12, to begin working where she left off in the spring.

The dredge was taken into winter quarters at Sorel on November 25. In a total of 195 days during which *No. 2* was at work, her machinery was in actual operation 68 per cent of the full working time.

The total number of cubic yards dredged amounted to 216,000 at a cost of \$48,267.66 or 22 $\frac{34}{100}$  cents per cubic yard.

*Elevator dredge Aberdeen (No. 3).*—The hull of this dredge is of steel, the complete vessel having been constructed at the Sorel shipyard in 1900. The buckets are of cast steel for work in hard material.

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During the winter of 1909-10, repairs were made to her woodwork and boilers, and her machinery was given a good overhauling and put in good shape for the next season's work. The lower tumbler was replaced by a new one.

The details of the operations of this dredge for the fiscal year beginning April 1, 1910, were as follows:—

Dredge *No. 3* also made a very early start, leaving Sorel for Point-aux-Trembles (en-haut) on April 11, where she was laid out to work on the south half of Point-aux-Trembles channel, deepening to 35 feet at low water of 1897.

This dredge worked there until May 23 and was then taken down to Cap Charles to begin work where she left off the previous season on the curve. The material to be removed consisted of very hard shale rock.

On May 26 a very serious accident occurred to the dredge, caused by the SS. *Royal Edward* which, while passing the dredge at too great a speed, forced the vessel forward making the bucket ladder frame strike the rock cut. The sudden jerk had the effect of breaking the upper tumbler shaft. This necessitated towing the dredge up to Sorel for repairs, which were completed on June 3, and the dredge returned to her work at Cap Charles curve. Owing to the exceedingly hard nature of the shale very little advance was made on the rock cut.

The rock-cutter which had been ready at the Sorel shipyard was brought down to Cap Charles curve and laid out where *No. 3* was working to break up the shale rock, which it did successfully.

This plant was only experimental, as the hull was one built for use as a stone-lifter, but the hoisting winch and ram were constructed at the works of Messers. Lobnitz & Company, Renfrew, Scotland.

The experiments proved satisfactory, as the dredge when laid out again was able to clean up the broken stone with much less strain on the machinery, thereby having fewer repairs, and less loss of time. With the aid of the rock-cutter the output of this dredge was increased by about 75 per cent.

While the rock-cutter was breaking up the shale, *No. 3* was on April 23 removed and laid out to work on Grande Pointe shoal a short distance below her cut, as requested by the shipping people. The material at this Pointe was clay and stones. *No. 3* worked at Grande Pointe shoal until August 8, when she was relaid at Cap Charles curve to clean up the area prepared by the rock-cutter. This was found to be well broken and was easily dredged. After finishing this area the dredge was again laid out on Grande Pointe shoal where she had left off.

On October 12, *No. 3* returned again to Cap Charles to clean up another area of broken shale rock, which was also easily removed.

The dredge worked at cleaning up the broken stone until November 6, and was then towed up to Point-aux-Trembles (en-haut) arriving there on November 9. She was laid out to work on the south half of the Point-aux-Trembles channel, deepening to 35 feet at L.W. of 1897. The material at Point-aux-Trembles consisted of sand and clay. *No. 3* continued there until November 21, when she was taken to Sorel to be put into winter quarters.

The working time of dredge *No. 3* was 184 days, the dredge being in actual operation 69 per cent of the full working time.

The total number of cubic yards removed amounted to 275,950, at a cost of \$50,230.58, or 18<sup>20</sup>/<sub>100</sub> cents per cubic yard.

*Elevator dredge Minto (No. 4).*—This dredge is of the same type and design as *No. 3*, and was constructed at the Sorel shipyard in 1900. *No. 4* is also provided with cast-steel buckets for dredging in rock and other hard material.

During the winter of 1909-10, the dredge was given a good overhauling, and the machinery put in good condition for the next season.

The upper and lower tumblers were renewed.

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The details of the operations during the season commencing April 1, 1910, were as follows:—

Dredge *No. 4* left Sorel for Varennes on April 11, and was laid out to work on the curve, widening, the material being blue clay.

She continued there until May 25, when the dredge was towed down to Cap à la Roche, and laid out where she left off the previous season, the material consisting of hard clay, embedded stones and shale rock.

Dredge *No. 4* worked successfully at Cap à la Roche until November 17, when a bucket link broke and the buckets went to the bottom. As the frame could not be lifted on account of a turn in the bucket chain, a diver was sent down to endeavour to straighten out matters, but as he found it would be a long job, it was decided as the season was far advanced, to lift up the anchors and tow the dredge to Sorel where the necessary repairs could be made more easily.

*No. 4* arrived at Sorel on November 21, and after the needful repairs were made, it was so late in the season, that the dredge was laid up for the winter.

The number of days during which this dredge was in operation was 88, and the percentage of time of actual work, 75.

The total number of cubic yards removed amounted to 399,750, at a cost of \$52,512.06, or 13<sup>13</sup>/<sub>100</sub> cents per cubic yard.

*Elevator dredge Lafontaine* (No. 5).—This dredge was also constructed at the Sorel shipyard, and was completed in 1901. The hull is of wood. She is fitted out with cast-steel buckets for rock.

During the winter of 1909-10, *No. 5* was given a thorough overhauling, and the necessary repairs were made to put her in good shape for the next season's work. The upper tumbler was renewed.

The details of the operations of this dredge for the fiscal year beginning April 1, 1910, were as follows:—

*No. 5* made an unusually early start, leaving Sorel for Varennes on April 11, and was laid out on the curve on her last season's cut to deepen the channel to 35 feet at L.W. of 1897, the material being hard clay. She continued working very satisfactorily until May 28, and was then taken down to work at Cap à la Roche, where the material to be dredged was shale rock.

On July 2, dredge *No. 5* unfortunately broke her bow wire, and the 'lewis,' on which the dredge is moored, came out, which necessitated a new hole being drilled in the rock for another 'lewis.' This not only caused a loss of time to *No. 5*, but also to dredge *No. 2*, from which dredge the 'lewis' had to be placed. The accident was caused by the Dominion SS. *Laurentic* passing the dredge at too great a speed.

Everything was in order again on July 9, but on the dredge commencing work the new 'lewis' pulled out, which caused more loss of time to both dredges. However, a better spot was found where the rock was more firm, and another was placed which stood the intense strain successfully all summer.

On the 16th it was found necessary to take the dredge up to Sorel for repairs to the upper tumbler, which were completed on the 19th. *No. 5* was then towed back to Cap à la Roche, where she was laid out again, and this dredge continued working until November 11, when she was taken up to Varennes and laid out on the curve, where she left off in the spring. The work at Varennes consisted in deepening the channel to 35 feet at L.W. of 1897 and also widening, the material being clay.

Dredge *No. 5* was taken into winter quarters at Sorel on November 25.

The working time of *No. 5* was 190 days. She was in actual operation 71 per cent of the full working time.

The total number of cubic yards removed amounted to 304,350, at a total cost of \$61,088.23, or 20<sup>07</sup>/<sub>100</sub> cents per cubic yard.



*Elevator Dredge Baldwin* (No. 6).—This dredge was constructed at the Sorel shipyard in 1902, the hull being of wood. No. 6 is provided with large built up buckets for work in soft material, but with sufficient teeth to enable the dredge to work in hard clay, &c.

The dredge was given a thorough overhauling during the winter of 1909-10 to put her in good shape for next season's work. The lower tumbler was renewed.

Everything being ready for the season's work, dredge No. 6 left Sorel for Montreal on April 21, where she was laid out to work on the ship channel approach to the floating dock basin at Maisonneuve, Montreal harbour, the material being clay, sand, stones and some loose shale rock.

This was finished on June 23, and after two days cleaning up of lumps in Pte. aux Trembles channel No. 6 was then towed down to White buoy curve, Lake St. Peter, to clean up lumps found by the testing scow, which work was completed on June 29, the material being soft blue clay.

The dredge was then taken down to work on the Champlain channel, cleaning up sand bars, and continued there until September 26, when it was found necessary to take the dredge to Sorel to have a new upper tumbler shaft put on. While removing the broken upper tumbler shaft it was discovered that the tumbler was also cracked, and as there was no spare one at the shipyard a new one had to be cast, which caused delay to the dredge. While ramming in the shaft into the new tumbler the new tumbler split to pieces. It was then decided to patch up the old tumbler to finish the season, as waiting for another to be cast would delay the dredge too long. The old tumbler was, therefore, repaired, and the dredge ready for work again on November 19. No. 6 was laid out on Ste. Anne Traverse, just below Sorel, where the material was soft blue clay, to enable her to finish out the season. The work consisted of deepening the channel to 35 feet at L.W. of 1897, and continued working there successfully until brought to Sorel to go into winter quarters on November 26, 1910.

In a total of 168 days during which this dredge was at work her machinery was in actual operation 75 per cent of the full working time.

The total number of cubic yards removed amounted to 375,925, at a cost of \$58,221.28, or 15 $\frac{4}{100}$  cents per cubic yard.

*Hydraulic Dredge J. Israel Tarte* (No. 7).—The hull of this dredge is of steel, of the same type and general design as the steel hulls of the elevator dredges.

She was constructed in 1902 by the Polson Iron Works Company of Toronto, Canada.

During the winter of 1909-10 the dredge was given a general overhauling and her machinery put in good order for the next season.

Four new lengths of pontoons, 100 feet long each, were completed during the winter to be added to the present discharge pipe to allow the dredged material to be deposited further away.

The inlet elbow of the suction pipe was altered to allow dredging to a greater depth in connection with the 35-foot project.

One new lifeboat was installed on board.

The dredge left Sorel to commence operations for the season on April 15, the earliest start on record, and was laid out to work just below White buoy curve to finish a short stretch of widening and deepening which had not been completed the previous season to 30 feet at L.W. of 1897, the material consisting of blue clay.

This work was finished on May 23, and the dredge was then laid out to begin dredging to 35 feet at L.W. of 1897 at the upper end of White buoy curve.

A great amount of time was lost during the season owing to difficulty in obtaining steam pressure. This was partly due to the bad condition of the boilers, but principally to the inferior quality of coal supplied.

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There was also loss of time due to passing steamers as the dredge was working right across the channel which necessitated taking great precaution to avoid blocking the channel, so that *No. 7* had to move over to the bank in good time to give a free passage to the vessels.

On July 15, the boilers were found to be in such bad condition that it was decided to bring the dredge to Sorel for repairs which were rushed day and night. These repairs were completed on July 23, and the dredge returned to Lake St. Peter and resumed her work.

An accident occurred on October 8, when the cutterhead shaft broke. This delayed the dredge several days.

*No. 7* continued working until November 19, and was then towed to Sorel to go into winter quarters.

In a total of 177 days during which this dredge was at work, her machinery was in operation 45 per cent of the full working time.

The total number of cubic yards removed amounted to 2,352,200 at a total cost of \$119,214.67 or 5<sup>00</sup>/<sub>100</sub> cents per cubic yard.

*Diper dredge No. 10—Steel hull.*—This dredge was constructed at the Sorel shipyard and completed in 1910. She was designed by Mr. John Kennedy, Consulting Engineer for the Montreal Harbour Commissioners, and is considered to be the most powerful dredge of this type afloat.

The following are her dimensions:—

Length moulded, 132 feet 6 inches

Breadth moulded 42 feet 0 inches.

Depth at bow, 11 feet 6 inches.

Depth at stern, 9 feet 9 inches.

Length of boom, centre to centre, 55 feet, 3 inches.

Length of spuds, 74 feet 0 inches.

Main engines, 2 compound, 16 & 30 x 22 inches.

Swinging engines, simples, 14 x 14 inches.

Capstan engines, simples, 10 x 14 inches.

The capacity of her bucket for rock is 9 cubic yards, and for soft material, 11 cubic yards.

The pull on the bucket hoisting rope = 180,000 lbs.

The dredge is able to work to 50 feet. She is equipped with electric light.

The steam for the machinery is provided by one marine boiler 12 feet in diameter x 10 feet in length, with two Morrison furnaces, the boiler having a working pressure of 160 lbs. per square inch.

The dredge left Sorel on Monday, August 1, for Montreal, being towed up by Canadian Government steamer *Lady Grey*, and tugs *Contrecoeur* and *Jessie Hume*. She arrived as far as Cap St. Michel that evening at 7 p.m., and was anchored for the night.

Next morning at 8.30 a.m. *No. 10* arrived at Molson's creek, and was laid out to work on the channel approach to the floating dock basin, Montreal harbour.

The dredge only commenced operations on August 10, and owing to a series of break-downs which was to be expected with a new and experimental machine, did not make a good showing for the season of 1910. It is anticipated however, that during 1911, she will prove her worth, after all the defects have been discovered and remedied.

During the season of 1910, out of a possible number of 92 days, the dredge was only in actual operation 57 per cent of that time.

The total quantity of cubic yards removed, the material being hard-pan, amounted to 56,725, at a cost of \$24,880.92 or 43<sup>86</sup>/<sub>100</sub> cents per cubic yard.

The total number of cubic yards removed by the dredging fleet in the ship channel between Montreal and Quebec, during the fiscal year ending March 31, 1911, amounted to 4,290,050 at a total cost of \$466,572.01 or 10<sup>87</sup>/<sub>100</sub> cents per cubic yard.

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*Hopper-Hydraulic dredge Beaujeu* (No. 8)—*Steel hull, twin-screw*.—This dredge was built at the Sorel shipyard in 1906.

During the winter of 1909-10 the dredge was given a thorough overhauling and put in good order for the next season's operations. Repairs were made to the gate valve of the suction pipe.

The details of the operations of this dredge for the fiscal year beginning April 1, 1910, were as follows:—

*No. 8* left Sorel on April 15, the earliest start on record for this dredge. She was laid out to work at St. Thomas Flats below Quebec on April 16. Her work consisted of dredging a channel to a width of 1,000 feet, and to a depth of 30 feet at extreme low tide, through St. Thomas bank, the material being clay and stones.

The north half, 500 feet wide, was completed during the season, and a good start made on the south half of the channel.

In order to give a 30 foot channel as quickly as possible it was decided to cut a channel 1,000 feet wide through St. Thomas bank, and mark a channel out more to the south where there is sufficient depth of water, by means of gas buoys, the straight channel to be completed later on. It is expected that the channel through St. Thomas bank will be completed and opened for navigation by the end of the season of 1911.

The dredge was started at breasting across the channel to give a good bottom, and after a little trouble at the commencement, she was operated very successfully by this method, and a great deal of work was accomplished during the season.

The *Beaujeu* continued working at St. Thomas bank until November 18, when she left for Sorel to go into winter quarters, arriving at the latter place on the 19th.

The working time of *No. 8* was from daylight to dark and the dredge was kept in operation 68 per cent of the full working time.

During the season the *Beaujeu* worked 186 days at St. Thomas channel and made 371 loads which amounted to 700,400 cubic yards at a total cost of \$59,822.66 or 8<sup>54</sup>/<sub>100</sub> cents per cubic yard.

*Suction-Hopper dredge Galveston* (No. 9)—*Steel hull, twin-screw*.—This dredge was constructed in Germany in 1904.

During the winter of 1909-10 the *Galveston* was given a thorough overhauling and her machinery was put in good order for the next season's work.

The details of the operations of this dredge for the fiscal year beginning April 1, 1910, were as follows:—

*No. 9* left Sorel for St. Michel-de-Bellechase, below Quebec, on April 18, 1910, and was beached at the latter place to open the suction-pipe opening on the starboard side which had been made watertight in the autumn to enable work being carried on during the winter in connection with her turbines, &c.

The *Galveston* was ready for work on April 25 and proceeded immediately to Beaujeu bank, below Quebec to commence operations for the season. Her work consisted of widening the channel and deepening to 35 feet at extreme low tide, to allow for filling in.

On May 18, *No. 9* was taken to St. Michel for repairs to the slide of the discharge pipe and had to be beached. These repairs were completed on the 21st, and the dredge returned to Beaujeu channel. She was beached again on September 17, for repairs to the turbines and boilers and returned to work on the 24th.

After a successful season the *Galveston* completed the channel at Beaujeu bank on November 13. She was then beached at St. Michel, to block up the discharge pipe opening and left for Sorel to go into winter quarters on November 15, arriving there on the 16th.

During the season, this dredge worked 180 days. Her hours of operation were from daylight to dark. She was in actual operation 60 per cent of the full working time, and made 408 loads, amounting to 609,600 cubic yards.



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The material consisted of sand, some blue clay and stones. The total cost amounted to \$50,383.35 or  $8^{26}_{100}$  cents per cubic yard.

The total number of cubic yards removed by the *Beaujeu* (No. 8) and the *Galveston* (No. 9) below Quebec during the fiscal year ending March 31, 1911, amounted to 1,310,000 at a total cost of \$110,226.01 or  $8^{47}_{100}$  cents per cubic yard.

The total number of cubic yards removed by the whole of the dredging fleet during the season, amounted to 5,600,050, at a total cost of \$576,838.02 or  $10^{30}_{100}$  cents per cubic yard.

PROGRESS of Dredging Operations at date of writing, the close of the season, 1910.

| Locality.                                   | Distance<br>English<br>miles. | Total length<br>requiring<br>dredging. | Length<br>dredged in<br>1910. | Total<br>length of<br>30 foot<br>channel<br>dredged. | Length<br>yet to be<br>dredged.                  |
|---|-------------------------------|--|-------------------------------|--|--|
|   |                               | Miles.                                 | Miles.                        | Miles.   | Miles.   |
| Division 1:—<br>Montreal to Sorel .....     | 45                            | 22·90                                  | .....                         | 22·90  | All completed.                                   |
| Division 2:—<br>Sorel to Batiscan.....      | 36                            | 12·45                                  | .....                         | 12·45  | All completed.                                   |
| Division 3:—<br>Lake St. Peter.....         | 20                            | 18·00                                  | 0·20                          | *0·20<br>†17·80                                      | All completed.<br>0·20<br>to be widened.<br>3·30 |
| Division 4:—<br>Batiscan to Quebec.....     | 59                            | 10·00                                  | 0·55                          | 6·70   |  |
| Division 5:—<br>Quebec to The Traverse..... | 60                            | 6·65                                   | 1·00                          | 4·00   | 2·65   |
| Total .....                                 | 220                           | 70·00                                  | 1·75                          | 64·05  | 5·95   |

\* Not widened.    † Widened.

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PROGRESS of Dredging Operations at date of writing, the close of the season, 1910.

| LOCALITY.                                       | LENGTH OF DREDGING |         | Cubic yards yet required to be done. |
|---|--------------------|---------|--------------------------------------|
|   | Required.          | Done.   |                                      |
|   | Miles.             | Miles.  |                                      |
| Division 1:—                                    |                    |         |                                      |
| Longueuil Shoal.....                            |                    | 1 10    |                                      |
| Longue Pte. to Pte. aux Trembles (en-haut)..... |                    | 5 05    |                                      |
| Ile Ste. Thérèse.....                           |                    | 0 40    |                                      |
| Varennes to Cap St. Michel.....                 |                    | 3 00    |                                      |
| Cap. St. Michel to Vercheres.....               |                    | 4 50    |                                      |
| Vercheres Traverse.....                         |                    | 1 10    |                                      |
| Vercheres to Contrecoeur.....                   |                    | 1 17    |                                      |
| Contrecoeur Channel.....                        |                    | 6 05    |                                      |
| Total.....                                      |                    | 22 90   |                                      |
| Division 2:—                                    |                    |         |                                      |
| Sorel to Ile de Grace.....                      |                    | 4 40    |                                      |
| Stone Island.....                               |                    | 1 10    |                                      |
| Ile aux Raisins.....                            |                    | 0 25    |                                      |
| Lake St. Peter (see Div. 3).....                |                    |         |                                      |
| Port St. Francis.....                           |                    | 0 50    |                                      |
| Three Rivers.....                               |                    | 0 50    |                                      |
| Cap. Madeleine to Berancour.....                |                    | 1 55    |                                      |
| Berancour to Champlain.....                     |                    | 2 25    |                                      |
| Champlain to Pte. Citrouille.....               |                    | 1 30    |                                      |
| Batture Perron.....                             |                    | 0 60    |                                      |
| Total.....                                      |                    | 12 45   |                                      |
| Division 3:—                                    |                    |         |                                      |
| Lake St. Peter.....                             |                    | * 0 20  | 200,000                              |
|   |                    | + 17 80 |                                      |
| Total.....                                      |                    | 18 00   | 200,000                              |
| Division 4:—                                    |                    |         |                                      |
| Batiscan to Cap. Levrard.....                   |                    | 3 00    |                                      |
| Cap à la Roche channel.....                     | 0 70               | 1 30    | 600,000                              |
| Pouillier Royer.....                            | 0 30               | 0 90    | 275,000                              |
| Cap Charles.....                                | 0 40               | 0 50    | 120,000                              |
| Grondines.....                                  | 0 70               | 0 10    | 240,000                              |
| Lotbiniere.....                                 |                    | 0 40    |                                      |
| Cap Sante.....                                  |                    | 0 20    |                                      |
| Ste. Croix.....                                 | 0 60               | 0 30    | 150,000                              |
| St. Augustin.....                               | 0 60               |         | 300,000                              |
| Total.....                                      | 3 30               | 6 70    | 1,685,000                            |
| Division 5:—                                    |                    |         |                                      |
| Quebec to The Traverse.....                     | 2 65               | 4 00    | 1,000,000                            |
| Total.....                                      | 2 65               | 4 00    | 1,000,000                            |
| Totals.....                                     | 5 95               | 64 05   | 2,885,000                            |
| Cubic yards yet to be done.....                 |                    |         | 2,885,000                            |
| Cubic yards done.....                           |                    |         | 73,721,627                           |
| Grand total.....                                |                    |         | 76,606,627                           |

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## RIVER ST. LAWRENCE SHIP CHANNEL.

## ABSTRACT of Work of Dredging Fleet during Fiscal Year ended March 31, 1911.

| Dredge.                         | Locality of Dredging.                  | Time of service. | Nominal work hours, 24 per day. | Hours actual dredging. | Number of scoops filled. | Number of cubic yards dredged (scoow measurement.) | Depth of dredging at low water. | Width in feet. | Character of Soil.                | Remarks.             |
|---------------------------------|--|------------------|---------------------------------|------------------------|--------------------------|--|---------------------------------|----------------|-----------------------------------|----------------------|
|                                 |  | Days.            | Hours.                          |                        |                          |  | Ft. In.                         | Feet.          |                                   |                      |
| <i>Laval</i> (No. 1).....       | Pointe - aux - Trembles (en haut)..... | 6                | 132                             | 92 $\frac{3}{4}$       | 60                       | 11,800   | 30 0                            | 450            | Clay.....                         | Capt. R. Matte.      |
|                                 | Floating dock approach                 | 79               | 1,732                           | 1,315 $\frac{3}{4}$    | 870                      | 169,700  | 30 0                            | 500 to 750     | Hard pan and stones.              |                      |
|                                 | Cap Léveard channel..                  | 80               | 1,762                           | 1,140                  | 556                      | 83,400   | 30 0                            | 450            | Clay and stones.                  |                      |
|                                 | Batiscau channel.....                  | 14               | 312                             | 237                    | 178                      | 31,000   | 30 0                            | 450            | Sand and stones.                  |                      |
|                                 | Champlain channel...                   | 9                | 204                             | 83 $\frac{1}{4}$       | 53                       | 13,250   | 30 0                            | 450            | Sand.                             |                      |
| <i>Laurier</i> (No. 2).....     |  | 188              | 4,152                           | 2,868 $\frac{3}{4}$    | 1,717                    | 309,150  |                                 |                |                                   | Capt. C. Gendron.    |
|                                 | Varennes curve.....                    | 47               | 1,044                           | 785 $\frac{3}{4}$      | 367                      | 73,400   | 35 0                            | 550 to 600     | Clay.....                         |                      |
|                                 | Cap à la Roche curve.                  | 148              | 3,252                           | 2,137                  | 713                      | 142,600  | 30 0                            | 450 to 550     | Shale rock.                       |                      |
| <i>Lady Aberdeen</i> (No. 3)... |  | 195              | 4,296                           | 2,922 $\frac{3}{4}$    | 1,080                    | 216,000  |                                 | 600            |                                   | Capt. P. Cardin.     |
|                                 | Pointe - aux - Trembles (en haut)..... | 46               | 1,008                           | 756 $\frac{3}{4}$      | 487                      | 97,400   | 35 0                            | 450            | Clay, sand and stones....         |                      |
|                                 | Cap Charles curve.....                 | 78               | 1,704                           | 1,061 $\frac{1}{2}$    | 408                      | 79,350   | 30 0                            | 600            | Shale rock and stones.            |                      |
|                                 | Grand Point shoal.....                 | 60               | 1,324                           | 973 $\frac{3}{4}$      | 496                      | 99,200   | 30 0                            | 450 to 600     | Clay, sand and stones.            |                      |
|                                 |  | 184              | 4,036                           | 2,791 $\frac{1}{4}$    | 1,391                    | 275,950  |                                 |                |                                   |                      |
| <i>Lady Minto</i> (No. 4).....  |  |                  |                                 |                        |                          |  |                                 |                |                                   | Capt. B. Ladebauche. |
|                                 | Varennes curve.....                    | 40               | 888                             | 709 $\frac{3}{4}$      | 712                      | 142,400  | 35 0                            | 550 to 600     | Clay and stones.....              |                      |
|                                 | Cap à la Roche curve.                  | 148              | 3,252                           | 2,391 $\frac{3}{4}$    | 1,285 $\frac{3}{4}$      | 257,350  | 30 0                            | 450 to 500     | Hard clay, shale rock and stones. |                      |
|                                 |  | 188              | 4,140                           | 3,101 $\frac{1}{4}$    | 1,998 $\frac{3}{4}$      | 399,750  |                                 |                |                                   |                      |



## RIVER ST. LAWRENCE SHIP CHANNEL—Continued.

## ABSTRACT of Work of Dredging Fleet during Fiscal Year ended March 31, 1911.

| Dredge.                           | Locality of Dredging.  | Time of service. | Nominal work hours, 24 per day. | Hours actual dredging. | Number of scows filled. | Number of cubic yards dredged (scow measurement.) | Depth of dredging at low water. | Width in feet. | Character of Soil.   | Remarks.             |
|-----------------------------------|--|------------------|---------------------------------|------------------------|-------------------------|---|---------------------------------|----------------|--|----------------------|
|                                   |  | Days.            | Hours.                          |                        |                         |   | Ft. In.                         | Feet.          |  |                      |
| <i>Lafontaine</i> (No. 5).....    | Varennes curve.....<br>Cap à la Roche curve.   | 53               | 1,176                           | 960                    | 517                     | 155,700   | 35 0                            | 550 to 600     | Hard clay .....<br>Shale rock.   | Capt. A. Marcotte.   |
|                                   |  | 137              | 3,000                           | 1,991½                 | 644                     | 148,650   | 30 0                            | 450 to 550     |  |                      |
|                                   |  | 190              | 4,176                           | 2,951½                 | 1,161                   | 304,350   |                                 |                |  |                      |
| <i>Baldwin</i> (No. 6).....       | Floating dock approach<br>Pointe-aux-Trembles<br>(en haut).....<br>White Buoy curve, L.<br>S.P. ....<br>Champlain Channel. .<br>St. Anne Traverse .... | 52               | 1,140                           | 889                    | 541                     | 105,875   | 30 0                            | 500 to 750     | Clay sand and stones....<br>Black sand (cleaning up).<br>Clay.<br>Sand.<br>Clay. | Capt. L. Dauphinais. |
|                                   |  | 2                | 48                              | 31                     | 3                       | 600   | 30 0                            | 450            |  |                      |
|                                   |  | 6                | 132                             | 65½                    | 64                      | 15,950  | 30 0                            | 800            |  |                      |
|                                   |  | 74               | 1,622                           | 1,219½                 | 555                     | 141,800   | 30 0                            | 450            |  |                      |
|                                   |  | 34               | 744                             | 564½                   | 376                     | 111,700   | 35 0                            | 450            |  |                      |
|                                   |  | 168              | 3,686                           | 2,770                  | 1,539                   | 375,925   |                                 |                |  |                      |
| <i>J. Israel Tarte</i> (No. 7)... | No. 3 to White Buoy,<br>L.S.P. ....<br>White Buoy to No. 2,<br>L.S.P. ....   | 31               | 672                             | 315                    | .....                   | 378,617   | 30 0                            | 450            | Clay.....<br>Very hard clay.   | Capt. J. S. Michaud. |
|                                   |  | 146              | 3,222                           | 1,390½                 | .....                   | 1,973,583   | 35 0                            | 450            |  |                      |
|                                   |  | 177              | 3,894                           | 1,705½                 | .....                   | 2,352,200   |                                 |                |  |                      |

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| <i>Beaujeu</i> (No. 8).....                               | 186   | 2,437½ | 1,666½ | 371   | 700,400   | 30 | 0 | 1,000      | Clay and stones.....                   | Capt. A. Bourget.  |
|---|-------|--------|--------|-------|-----------|----|---|------------|--|--------------------|
| <i>Galveston</i> (No. 9).....                             | 180   | 2,292½ | 1,383½ | 408   | 609,600   | 30 | 0 | 1,200      | Hard sand, clay, stones<br>and gravel. | Capt. L. Lemieux.  |
| <i>Dipper Dredge</i> (No. 10)..<br>Floating dock approach | 96    | .....  | .....  | 257   | 56,725    | 30 | 0 | 500 to 750 | Hardpan and stones ....                | Capt. J. A. Upper. |
|   | ..... | .....  | .....  | ..... | 5,600,050 |    |   |            |  |                    |

RIVER ST. LAWRENCE SHIP CHANNEL—Continued.  
 CLASSIFICATION of Disbursements for Fiscal Year ended March 31, 1911.

| Vessels.   | Fuel.     | Wages.    | Board.   | Stores and materials. | Repairs and labour. | Expenditure: new plant, rebuilding shipyards, &c. | Proportion of general and office expenses, &c. | Expenditure for each vessel. | Floating shop, rock-crusher and stone elevator dredges. | Tug service. | Inspection, towing, sweeping, &c. | Total cost of operations of each dredge and plant during Fiscal Year. | Total expenditure on different appropriations. |
|--|-----------|-----------|----------|-----------------------|---------------------|---|--|------------------------------|---|--------------|-----------------------------------|---|--|
|  | \$        | cts.      | \$       | cts.                  | \$                  | cts.  | \$   | cts.                         | \$  | cts.         | \$                                | cts.  | \$   |
| Dredge Laval (No. 1).....                          | 7,726 38  |           | 3,172 39 | 3,576 87              | 8,848 48            |   | 1,826 43                                       | 33,408 31                    | 2,820 72  | 11,695 61    | 4,232 03                          | 52,156 67   |  |
| Tug Portneuf.....                                  | 3,404 51  | 3,865 98  | 1,655 44 | 791 38                | 1,337 87            |   | 639 43   | 11,695 61                    |   |              |                                   |   |  |
| Dredge Laurier (No. 2).....                        | 7,988 11  | 8,187 67  | 3,231 95 | 2,311 23              | 7,877 46            |   | 1,682 70                                       | 30,779 12                    | 2,820 72  | 10,435 79    | 4,232 03                          | 45,267 66   |  |
| Tug Cartier.....                                   | 2,570 75  | 4,245 64  | 1,844 03 | 436 42                | 768 40              |   | 570 55   | 10,435 79                    |   |              |                                   |   |  |
| Dredge Lady Aberdeen (No. 3).....                  | 6,491 15  | 8,188 72  | 3,206 02 | 3,518 75              | 8,985 91            |   | 1,757 54                                       | 32,148 09                    | 2,820 72  | 11,029 74    | 4,232 03                          | 50,230 58   |  |
| Tug Emilia.....                                    | 2,910 58  | 3,891 56  | 1,620 90 | 885 41                | 1,118 26            |   | 603 03   | 11,029 74                    |   |              |                                   |   |  |
| Dredge Lady Minto (No. 4).....                     | 6,514 86  | 8,141 75  | 3,222 95 | 4,217 63              | 7,734 22            |   | 1,725 20                                       | 31,556 61                    | 2,820 72  | 13,902 70    | 4,232 03                          | 52,512 06   |  |
| Tug Horville.....                                  | 3,692 03  | 4,452 73  | 1,912 13 | 1,090 97              | 1,994 76            |   | 760 08   | 13,902 70                    |   |              |                                   |   |  |
| Dredge LaFontaine (No. 5).....                     | 9,982 46  | 8,247 46  | 3,261 60 | 6,127 54              | 9,378 27            |   | 2,139 60                                       | 39,136 93                    | 2,820 71  | 14,898 56    | 4,232 03                          | 61,088 23   |  |
| Tug Lac St. Pierre.....                            | 4,632 16  | 4,513 47  | 1,908 25 | 994 61                | 2,065 55            |   | 814 52   | 14,898 56                    |   |              |                                   |   |  |
| Dredge Baldwin (No. 6).....                        | 7,757 65  | 7,984 87  | 3,084 91 | 5,272 5               | 15,213 53           |   | 2,273 54                                       | 41,587 03                    | 2,820 71  | 9,581 49     | 4,232 03                          | 58,221 28   |  |
| Tug Champlain.....                                 | 2,360 98  | 3,353 74  | 1,406 91 | 864 55                | 1,065 47            |   | 523 84   | 9,581 49                     |   |              |                                   |   |  |
| Dredge J. Israel Tarte (No. 7).....                | 35,544 78 | 14,322 50 | 5,108 48 | 9,842 81              | 24,779 32           |   | 5,781 49                                       | 94,779 38                    |   | 20,203 20    | 4,232 03                          | 119,214 61  |  |
| Tug Montcalm.....                                  | 2,747 71  | 4,496 69  | 1,943 38 | 1,038 79              | 2,081 60            |   | 711 82   | 13,019 94                    |   |              |                                   |   |  |
| Tug Carmichael.....                                | 1,634 98  | 2,310 83  | 848 18   | 630 82                | 1,365 09            |   | 392 74   | 7,183 26                     |   |              |                                   |   |  |
| Dredge Beaujeu (No. 8).....                        | 14,124 94 | 12,293 19 | 3,698 69 | 4,872 31              | 10,722 87           |   | 2,643 56                                       | 48,355 56                    |   | 7,295 07     | 4,232 03                          | 59,882 66   |  |
| Dredge Gaston (No. 9).....                         | 11,134 27 | 10,349 27 | 3,180 65 | 4,113 38              | 7,954 44            |   | 2,124 25                                       | 38,856 26                    |   | 7,295 06     | 4,232 03                          | 50,383 35   |  |
| Tug Jas. Howden, equally between Nos. 8 and 9..... | 3,635 37  | 1,950 89  | 1,876 67 | 1,056 07              | 2,273 47            |   | 797 66   | 14,590 13                    |   |              |                                   |   |  |
| Dipper Dredge (No. 10).....                        | 2,370 82  | 3,515 47  | 998 10   | 1,239 90              | 2,996 71            |   | 643 17   | 11,764 17                    |   | 8,884 72     | 4,232 03                          | 24,880 92   | 376,838 02                                     |
| Tug Contracteur.....                               | 1,629 04  | 2,891 34  | 1,087 91 | 999 05                | 1,791 62            |   | 485 76   | 8,884 72                     |   |              |                                   |   |  |
| Tug Jessie Hume, equally divided into three.....   | 2,651 91  | 2,402 09  | 905 28   | 690 07                | 1,550 45            |   | 475 39   | 8,695 19                     |   |              |                                   |   |  |
| Sir. De Loris, each dredge.....                    | 3,729 36  | 5,369 64  | 2,298 54 | 1,622 00              | 1,869 08            |   | 861 05   | 15,749 67                    |   |              |                                   |   |  |
| Sir. Frontenac, each dredge.....                   | 3,733 75  | 6,157 55  | 2,734 76 | 1,860 44              | 2,411 68            |   | 977 26   | 17,875 44                    |   |              |                                   |   |  |



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|  |          |           |          |          |          |           |           |           |  |
|--|----------|-----------|----------|----------|----------|-----------|-----------|-----------|--|
| Stone lifter No. 2 (Divided equally between No. 2 and No. 3) | 222 82   | 1,311 46  | 379 63   | 753 25   | 902 49   | 206 47    | 3,776 12  | 34,556 17 |  |
| Rock-cutter.....   | 1,570 85 | 2,318 40  | 974 53   | 940 56   | 1,591 14 | 127 54    | 2,832 20  |           |  |
| Floating shop.... (dredges)                                  |          | 1,101 90  | 407 39   | 980 07   | 360 27   | 427 69    | 7,822 67  |           |  |
| Str. <i>Lady Grey</i> (ice breaking and emergency tug)...    | 8,757 13 | 10,529 77 | 4,535 09 | 4,047 99 | 4,797 02 | 163 68    | 2,993 31  |           |  |
| Construction for dredging fleet—                             |          |           |          |          |          | 1,889 17  | 34,556 17 |           |  |
| Tug <i>Carmelia</i> new boiler.                              |          |           |          |          |          |           |           |           |  |
| Construction of 400 feet long pontoons.....                  |          |           |          |          |          |           |           |           |  |
| Constr. 1-300 c. y. dump scow, No. 33.....                   |          |           |          |          |          | 4,354 85  |           |           |  |
| Constr. 2-200 c. y. dump scow, No. 34.....                   |          |           |          |          |          | 4,296 36  |           |           |  |
| Constr. steel elev. dredge No. 37.....                       |          |           |          |          |          | 11,644 36 |           |           |  |
| Constr. steel tug, No. 38.                                   |          |           |          |          |          | 29,869 44 |           |           |  |
| " testing scow No. 32  |          |           |          |          |          | 3,665 97  |           |           |  |
| No. 39.....  |          |           |          |          |          | 920 39    |           |           |  |
|  |          |           |          |          |          | 2,918 31  |           |           |  |
| Improvements to Sorel shipyard—                              |          |           |          |          |          |           |           |           |  |
| Boiler shop, new tools, machinery.....                       |          |           |          |          |          | 8,627 41  |           |           |  |
| Blacksmith shop, new tools, machinery.....                   |          |           |          |          |          | 2,725 61  |           |           |  |
| Machine shop, new tools, machinery.....                      |          |           |          |          |          | 9,820 25  |           |           |  |
| Pipe shop, new tools, machinery.....                         |          |           |          |          |          | 409 68    |           |           |  |
| Carpenter's shop, new tools, machinery.....                  |          |           |          |          |          | 107 10    |           |           |  |
| Saw mill shop, new tools, machinery.....                     |          |           |          |          |          | 5,593 95  |           |           |  |
| Telephone installation in shops.....                         |          |           |          |          |          | 642 40    |           |           |  |
| Ship yard railway.....                                       |          |           |          |          |          | 140 39    |           |           |  |
| Slip-way No. 2.....  |          |           |          |          |          | 8,820 87  |           |           |  |
| New shear legs.....  |          |           |          |          |          | 7,557 40  |           |           |  |
| Water-works.....   |          |           |          |          |          | 177 43    |           |           |  |
| Shipyard general.....  |          |           |          |          |          | 794 69    |           |           |  |
| Coal tar basin.....  |          |           |          |          |          | 4 49      |           |           |  |



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|                                 |            |            |       |            |            |           |       |        |       |                                       |   |
|---------------------------------|------------|------------|-------|------------|------------|-----------|-------|--------|-------|---------------------------------------|---|
| <i>Lady Aberdeen</i> (No. 3).   | 50,230 58  | 184,272 99 | 46    | 12,557 66  | .....      | 97,400    | ..... | 12,830 | ..... | Clay, sand and stones.....            | Pte. aux Trembles (E.H.).                   |
|                                 |            |            | 78    | 21,293 39  | .....      | 79,350    | ..... | 26,100 | ..... | Shale rock and stones.....            | Cap Charles curve.                          |
|                                 |            |            | 60    | 16,379 53  | .....      | 99,200    | ..... | 16,100 | ..... | Clay, sand and stones.....            | Grande Pointe shoal.                        |
|                                 |            |            |       |            | 50,230 58  | 275,950   | ..... | 18,500 | ..... |                                       |   |
| <i>Lady Minto</i> (No. 4)....   | 52,512 06  | 188,279 32 | 40    | 11,172 80  | .....      | 142,400   | ..... | 7,84   | ..... | Clay and stones.....                  | Varènes curve.                              |
|                                 |            |            | 148   | 41,339 26  | .....      | 257,350   | ..... | 16,100 | ..... | Hard clay, shale rock and stones..... | Cap à la Roche curve.                       |
|                                 |            |            |       |            | 52,512 06  | 399 750   | ..... | 13,500 | ..... |                                       |   |
| <i>Lafontaine</i> (No. 5).....  | 61,088 23  | 190,321 52 | 53    | 17,040 44  | .....      | 155,700   | ..... | 10,34  | ..... | Hard clay.....                        | Varènes curve.                              |
|                                 |            |            | 137   | 44,047 79  | .....      | 148,650   | ..... | 29,100 | ..... | Shale rock.....                       | Cap à la Roche curve.                       |
|                                 |            |            |       |            | 61,088 23  | 304,350   | ..... | 20,100 | ..... |                                       |   |
| <i>Baldwin</i> (No. 6).....     | 58,221 28  | 168,346 55 | 52    | 18,020 87  | .....      | 105,375   | ..... | 17,100 | ..... | Clay, sand and stones.....            | Floating dock approach.                     |
|                                 |            |            | 2     | 693 11     | .....      | 600       | ..... | \$1.15 | ..... | Black sand.....                       | Pte. aux Trembles (E.H.).                   |
|                                 |            |            | 6     | 2,079 33   | .....      | 15,950    | ..... | 13,100 | ..... | Clay.....                             | White Buoy Curve.                           |
|                                 |            |            |       |            | .....      | .....     | ..... | 18,100 | ..... | Sand.....                             | L. St. P.                                   |
|                                 |            |            | 74    | 25,645 09  | .....      | 141,800   | ..... | 10,100 | ..... | Champlain channel.                    | Ste. Anne Traverse.                         |
|                                 |            |            | 34    | 11,782 38  | .....      | 111,700   | ..... | 15,480 | ..... | Clay.....                             |   |
|                                 |            |            |       |            | 58,221 28  | 375,925   | ..... | .....  | ..... |                                       |   |
| <i>J. Israel Tarte</i> (No. 7). | 119,214 61 | 177,673 53 | 31    | 20,879 38  | .....      | 378,617   | ..... | 5,51   | ..... | Clay.....                             | Curve No. 3 to White Buoy C.                |
|                                 |            |            | 146   | 98,335 23  | .....      | 1,973,583 | ..... | 4,100  | ..... | Very hard clay.....                   | White Buoy to Curve No. 2 (Lake St. Peter). |
|                                 |            |            |       |            | 119,214 61 | 2,352,200 | ..... | 5,100  | ..... |                                       |   |
| <i>Beaujeu</i> (No. 8).....     | 59,882 66  | 186,321 95 | 186   | 59,882 66  | .....      | 700,400   | ..... | 8,54   | ..... | Clay and stones.....                  | St. Thomas channel.                         |
|                                 |            |            |       |            | 59,882 66  | 700,400   | ..... | 8,100  | ..... |                                       |   |
| <i>Galveston</i> (No. 9).....   | 50,383 35  | 180,279 90 | 180   | 50,383 35  | .....      | 609,600   | ..... | 8,100  | ..... | Sand, clay, stones and gravel.....    | Beaujeu channel.                            |
|                                 |            |            |       |            | 50,383 35  | 609,600   | ..... | .....  | ..... |                                       |   |
| <i>Dipper dredge</i> (No. 10)   | 24,880 92  | 96,259 18  | 96    | 24,880 92  | .....      | 56,725    | ..... | 43,80  | ..... | Hardpan and stones.....               | Floating dock approach, (Montreal Harbour). |
|                                 |            |            |       |            | 24,880 92  | 56,725    | ..... | 43,80  | ..... |                                       |   |
|                                 | 576,838 02 | 1,752      | 1,752 | 576,838 02 | .....      | 5,600,050 | ..... | .....  | ..... |                                       |   |



## DREDGING PLANT.

The following is a description of the dredging plant at the end of the season of 1910, owned and operated by the Department of Marine and Fisheries in connection with the River St. Lawrence ship channel:—

## DREDGES.

*The Elevator Dredge 'Laval' (No. 1), wooden hull—*

Length over all, 150 feet.  
Breadth of beam, 30 feet.  
Depth of hold, 14 feet.  
Average draught, 11 feet.  
Greatest working depth, 42 feet.  
Hull built in Ottawa in 1894.  
Steel buckets.  
Working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The Elevator Dredge 'Laurier' (No. 2), wooden hull—*

Length over all, 163 feet.  
Breadth of beam, 32 feet.  
Depth of hold, 14 feet.  
Average draught, 10 feet.  
Greatest working depth, 45 feet.  
Built at Sorel shipyard in 1897.  
Steel buckets.  
Working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The Elevator Dredge 'Lady Aberdeen' (No. 3), steel hull—*

Length over all, 148 feet.  
Breadth of beam, 32 feet.  
Depth of hold, 13 feet.  
Average draught, 8.5 feet.  
Greatest working depth, 42.5 feet.  
Built at Sorel shipyard in 1900.  
Steel buckets.  
Working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The Elevator Dredge 'Lady Minto' (No. 4) steel hull—*

Length over all, 148 feet.  
Breadth of beam, 32 feet.  
Depth of hold, 13 feet.  
Average draught, 8.5 feet.  
Greatest working depth, 42.5 feet.  
Built at Sorel shipyard in 1900.  
Steel buckets.  
Working capacity per day in hard material, 1,000 to 2,000 cubic yards.

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*The Elevator Dredge 'Lafontaine' (No. 5) wooden hull—*

Length over all, 168 feet.

Breadth of beam, 32 feet.

Depth of hold, 14 feet.

Average draught, 9 feet.

Greatest working depth, 45 feet.

Built at Sorel shipyard in 1901.

Steel buckets.

Working capacity per day in hard material, 1,000 to 2,000 cubic yards.

*The Elevator Dredge 'Baldwin' (No. 6), wooden hull—*

Length over all, 165 feet.

Breadth of beam, 34 feet.

Depth of hold, 14 feet.

Average draught, 8 feet.

Greatest working depth, 42.5 feet.

Built at Sorel shipyard in 1902.

One cubic yard buckets strengthened for fairly hard material.

Working capacity per day in medium material, 2,500 to 3,500 cubic yards.

*The Hydraulic Dredge 'J. Israel Tarte' (No. 7), steel hull—*

Length over all, 160 feet.

Breadth of beam, 42 feet.

Depth of hold, 12.5 feet.

Average draught, 6 feet.

Length of suction pipe, 80 feet.

Greatest working depth, 47 feet.

Built at the Polson Iron Works, Toronto, in 1902.

Working capacity per day in soft material, 12,000 to 20,000 cubic yards.

*Discharge Pipe and pontoons of Dredge 'J. I. Tarte' (No. 7)—*

Twenty-three lengths of pipe, 36 inches diameter by 100 feet long.

One length of pipe 36 inches diameter by 35 feet long.

Twenty-seven pairs of pontoons for floating pipes, 42 inches diameter by 90 feet long.

*Winch Scow (No. 3) for Dredge 'J. Israel Tarte' (wooden hull)—*

Length over all, 60 feet.

Breadth of beam, 18 feet.

Depth of hold, 6 feet.

Built at Sorel shipyard in 1902.

*Winch scow (wooden hull) for Dredge 'J. Israel Tarte' (with steam boiler and steam winch)—*

Length over all, 63 feet.

Breadth of beam, 27 feet.

Depth of hold, 8 feet.

Built at Sorel shipyard in 1909.

*The Suction Hopper Dredge 'Galveston' (No. 9), steel hull, twin-screw—*

Length over all, 233 feet.

Breadth of beam, 39 feet.

Depth of hold, 15 feet 5 inches.

2 GEORGE V., A. 1912

Draft when loaded with 1,800 tons, 14 feet 9 inches aft, 13 feet 1 inch forward.

Greatest working depth, 55 feet.

Built in 1904.

Two suction pumps, Dutch type, 8 feet 6 inches outside diameter.

Working capacity, 1,350 cubic yards in 45 minutes.

Hopper capacity, 1,400 cubic yards.

*Sea-going, Suction Hopper Dredge 'Beaujeu' (No. 8), steel hull twin-screw—*

Length between perpendiculars, 264 feet.

Breadth of beam, 45 feet.

Depth of hull, 20 feet.

Capacity of hoppers, 2,000 cubic yards in 45 minutes.

Greatest working depth, 65 feet.

Draught when loaded, 15 feet.

Ordinary speed, 9 statute miles.

Built in Sorel shipyard in 1907.

*Dipper Dredge 'No. 10,' steel hull—*

Length moulded, 132.5 feet.

Breadth moulded, 42 feet.

Depth at bow, 11.5 feet.

Depth at stern, 9.7 feet.

Length of spuds, 74 feet.

Bucket capacity, one 11 yard for soft material, one 9 yard for hard material.

Capable of dredging to 50 feet.

Built at Sorel shipyard in 1910.

*The 'Rockcutter,' steel hull—*

Length over all, 100 feet.

Breadth of beam, 32 feet.

Depth of hold, 12 feet.

Weight of ram, 20 tons.

Hoisting winch and ram built by Lobnitz & Co., Renfrew, Scotland.

Hull built at Sorel shipyard in 1910.

#### TUGS.

*The Ice-breaking and Sweeping Tug 'Lady Grey' (steel hull, twin-screw)—*

Length between perpendiculars, 172 feet.

Length over all, 183 feet 6 inches.

Breadth moulded, 32 feet.

Breadth extreme, 32 feet 3 inches.

Depth moulded, 18 feet.

Draught mean to bottom of flat plate keel (normal), 12 feet.

Draught when ice-breaking, about 13 feet.

Displacement in tons at 12-foot draught, 1,070.

Mean speed at 12-foot draught on 6 runs over measured mile base, 14 knots.

Built by Vickers Sons & Maxim, Ltd., Barrow-in-Furness, in 1906.

*The Tug 'Frontenac' (composite hull)—*

Length over all, 113 feet.

Breadth of beam, 23 feet.

Depth of hold, 10 feet.

Average draught, 9 feet.

Built at Sorel shipyard in 1902.



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*The Tug 'De Levis' (wooden hull).—*

Length over all, 104 feet.  
Breadth of beam, 20 feet.  
Depth of hold, 10 feet.  
Average draught, 8 feet.  
Built at Sorel shipyard in 1902.

*The Tug 'James Howden' (wooden hull).—*

Length over all, 100 feet.  
Breadth of beam, 21 feet.  
Depth of hold, 10 feet.  
Average draft, 7.5 feet.  
Built at Sorel shipyard in 1903.

*The Tug 'St. Jean Iberville' (steel hull).—*

Length over all, 90 feet.  
Breadth of beam, 18 feet.  
Depth of hold, 12 feet.  
Average draught, 10 feet.  
Built at Sorel shipyard in 1897.

*The Tug 'Lac St. Pierre' (wooden hull).—*

Length over all, 100 feet.  
Breadth of beam, 21 feet.  
Depth of hold, 10 feet.  
Average draft, 7.6 feet.  
Built at Sorel shipyard in 1901.

*The Tug 'Portneuf' (wooden hull).—*

Length over all, 85 feet.  
Breadth of beam, 17 feet 3 inches.  
Depth of hold, 9 feet 9 inches.  
Average draught, 8 feet.  
Built in 1905.  
Built at Sorel shipyard in 1893.

*The Tug 'Cartier' (wooden hull).—*

Length over all, 84 feet.  
Breadth of beam, 18 feet.  
Depth of hold, 9.5 feet.  
Average draught, 8 feet.

*The Tug 'Emilia' (wooden hull).—*

Length over all, 84 feet.  
Breadth of beam, 17 feet.  
Depth of hold, 9 feet.  
Average draught, 8 feet.  
Built at Sorel shipyard in 1898.

*The Tug 'Champlain' (wooden hull).—*

Length over all, 84 feet.  
Breadth of beam, 17 feet.  
Depth of hold, 9 feet.  
Average draught, 8 feet.  
Built at Sorel shipyard in 1901.

*The Tug 'Jessie Hume' (wooden hull).—*

Length over all, 72 feet.  
Breadth of beam, 17.2 feet.  
Depth of hold, 10 feet.  
Average draught, 8.5 feet.  
Built in Buffalo in 1878.

*The Tug 'Montcalm' (wooden hull).—*

Length over all, 80 feet.  
Breadth of beam, 23 feet.  
Depth of hold, 8 feet.  
Average draught, 7 feet.  
Built at Sorel shipyard in 1903.

*The Tug 'Carmelia' (wooden hull).—*

Length over all, 84 feet.  
Breadth of beam, 17 feet.  
Depth of hold, 9 feet.  
Average draught, 8 feet.  
Purchased in 1903.

*The Tug 'Contrecoeur' (wooden hull).—*

Length over all, 90 feet.  
Breadth of beam, 22.7 feet.  
Depth of hold, 9 feet.  
Average draught, 7 feet.  
Built at Sorel shipyard.

## COAL BARGES.

*Coal Barge 'No. 1' (wooden hull).—*

Length over all, 120 feet.  
Breadth of beam, 24 feet.  
Depth of hold, 10 feet.  
Built at Sorel shipyard in 1898.

*Coal Barge 'No. 2' (wooden hull).—*

Length over all, 125 feet.  
Breadth of beam, 25 feet.  
Depth of hold, 11 feet.  
Built at Sorel shipyard in 1900.

*Coal Barge 'No. 3' (wooden hull).—*

Length over all, 98 feet.  
Breadth of beam, 28 feet.  
Depth of hold, 12 feet.  
Built at Sorel shipyard in 1902.

*Coal Barge 'No. 4' (wooden hull).—*

Length over all, 98 feet.  
Breadth of beam, 28 feet.  
Depth of hold, 12 feet.  
Built at Sorel shipyard in 1903.

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*Stone-lifter 'No. 2' (wooden hull).—*

Length over all, 80 feet.  
Breadth of beam, 25 feet.  
Depth of hold, 9.8 feet.  
Re-built at Sorel shipyard in 1897.

*Stone-lifter 'No. 3' (wooden hull).—*

Length over all, 108 feet.  
Breadth of beam, 34 feet.  
Depth of hold, 14 feet.  
Built at Sorel shipyard in 1903.

*Sounding Scow 'No. 1' (wooden hull).—*

Length over all, 60 feet.  
Breadth of beam, 25 feet.  
Depth of hold, 6 feet.  
Built at Sorel shipyard in 1898.

*Sounding Scow 'No. 2' (wooden hull).—*

Length over all, 75 feet.  
Breadth of beam, 38 feet.  
Depth of hold, 5 feet.  
Transferred from Prescott agency in 1909; re-modelled and improved.

*Floating shop (wooden hull).—*

Length over all, 90 feet 4 inches.  
Breadth of beam, 25 feet.  
Depth of hull, 9 feet.  
I forge, 1 scraper, 1 emery wheel, 1 drill, 1 lathe, 1 6 h.p. Foss gasoline engine.  
Living quarters for four.  
Built at Sorel shipyard in 1908.

*One Boarding Scow (wooden hull).—*

Length over all, 60 feet.  
Breadth of beam, 18 feet.  
Depth of hold, 7 feet.  
Built at Sorel shipyard in 1908.

*One Boarding Scow (wooden hull).—*

Length over all, 75 feet.  
Breadth of beam, 25 feet.  
Depth of hold, 5.5 feet.  
Built at Sorel shipyard in 1902.

*Two Hopper Scows (wooden hulls) with hydraulic power for closing gates.—*

Length over all, 97 feet.  
Breadth of beam, 24.5 feet.  
Depth of hold, 9 feet.  
Capacity 200 cubic yards.  
Built at Sorel shipyard in 1897.



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*Two Hopper Scows (wooden hulls) with hydraulic power for closing gates.—*

Length over all, 90 feet.  
Breadth of beam, 18 feet.  
Depth of hold, 7 feet.  
Capacity, 150 cubic yards.  
Built at Sorel shipyard in 1898.

*Four Hopper scows (wooden hulls) with hydraulic power for closing gates.—*

Length over all, 97 feet.  
Breadth of beam, 24 feet.  
Depth of hold, 9 feet.  
Capacity, 200 cubic yards.  
Built at Sorel shipyard in 1899 and 1901.

*Five Hopper Scows (wooden hulls) with hydraulic power for closing gates.—*

Length all over, 98 feet.  
Breadth of beam, 24 feet.  
Depth of hold, 9.5 feet.  
Capacity, 300 cubic yards.  
Built at Sorel shipyard, 2 in 1901, 3 in 1902.

*Two Hopper Scows (wooden hulls) with hydraulic power for closing gates.—*

Length over all, 97 feet.  
Breadth of beam, 24.5 feet.  
Depth of hold, 9 feet.  
Capacity, 300 cubic yards.  
Built at Sorel shipyard in 1903.

*Two Hopper Scows (wooden hulls) with hydraulic power for closing gates.—*

Length over all, 93 feet.  
Breadth of beam, 24.5 feet.  
Depth of hold, 8 feet.  
Capacity, 250 cubic yards.  
Built at Sorel shipyard in 1909.

*Two Small Flat Scows (wooden hulls) used at the Sorel shipyard.—*

20 feet by 40 feet.  
One of these with a derrick of 5 tons lifting capacity.

## APPENDIX No. 4.

## SOREL SHIPYARD.

SOREL, July 15, 1911.

ALEX. JOHNSTON, Esq.,  
Deputy Minister, Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the following report on work performed at the Sorel shipyard during the fiscal year, 1910-11.

At the beginning of the fiscal year, the most important work on hand was the repairs and equipment of the fleet of vessels wintering at the shipyard. This consisted at the time, in about 65 vessels, dredges, tugs and scows of different descriptions, belonging to the dredging fleet, and 10 other crafts of the other branches.

## SPRING REPAIRS.

This work was the continuation and completion of the work carried on during the previous winter and described in the report for 1909-10.

Although, owing to a mild winter, the opening of navigation was earlier than usual the vessels were ready to go out as soon as the state of the river allowed the work of dredging to be started.

The Richelieu river was free of ice on March 27, and the St. Lawrence on April 2. Dredges Nos. 2, 3, 4 and 5 left Sorel on April 11, to resume their respective work.

## CONSTRUCTION.

Work was continued on vessel No. 21 now known as the *Montmagny*. The vessel was completed, painted, furnished, &c.

Trial trip was made on July 2, and the vessel was sent to Quebec on July 3.

*Dredge, Construction No. 19.*—Was completed in July 1910, and put to work. This dredge is known as No. 10.

*Tug, Construction No. 29* was completed and put in commission under the name of *Contrecoeur*.

*Elevator Dredge, Construction No. 26.*—Work was begun on Elevator dredge, Construction No. 26, the hull was launched on November 22.

*Dipper Dredge No. 24* was sufficiently advanced to be launched on October 29. Since then, the installation of machinery has gone on; the woodwork has been commenced and the whole dredge is in a fair way to completion.

*Life-saving boats.*—Two self-bailing motor boats have been built for the life-saving service. They were completed and put on trial, November 16, 1910.

*Dumping Scows, Construction No. 28.*—Two wooden scows were begun in September, 1910, and completed during winter, ready to be launched in April, 1911. The scows are 92 feet long, 26½ feet wide, 8½ feet deep and have four wells holding together 200 cubic yards of material.

*Wooden Tug, Construction No. 35.*—To be 92 feet long by 22 feet beam by 6 feet draught was begun in 1910.

The vessel will have twin screw propellers and engines of 400 horse-power. At the end of the fiscal year, the hull is complete. The engines are built under contract with the St. John Iron Works, New Brunswick.

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*Sounding Scow, Construction No. 39.*—A sounding scow was begun during winter of 1911, and remains to be completed in the coming year.

*Coal Barge Construction No. 32.*—This barge is of steel throughout, and will be 500 tons capacity.

At end of fiscal year, work was progressing on this vessel, with a view of launching the hull early in the spring.

*Sand Scow, Construction No. 33.*—This is a steel dumping scow of 200 yards capacity. The wells will be fitted with conical valves worked by hydraulic cylinders. The work is in progress.

Besides the above constructions, plans and model for two steel tugs, were prepared. The material has been ordered and was almost completely delivered before end of fiscal year.

The engines for these two tugs are also under contract with the St. John iron works, and will be exact counterparts of the engines for the tug No. 35.

*Rock Breaker, Lobnitz system.*—During summer of 1910, the machinery was received for a rock breaker for submarine work. This was installed on board a scow built under Construction No. 20, and intended as a stone lifter. The rock breaker was completely installed and put in commission.

#### MAINTENANCE AND IMPROVEMENTS TO BUILDINGS AND PLANT OF THE SHIPYARD.

The whole of the buildings were maintained and repaired, and kept in good working order, so were the narrow gauge railway, the waterworks system, compressed air distribution, electric power lines and internal telephone lines.

The side walls of the buildings were painted, an extension made to the wooden platform of the coal wharf.

*Building No. 2.*—Galvanized roof was repaired. In the main boiler shop, one coping machine and two new punches were installed.

*Building No. 3.*—Building No. 3 had ordinary repairs and painting, and change was made in the stairs leading to the mould loft.

*Building No. 4.*—This contains the offices and stores. The floor had to be braced from underneath, as everything is so decayed that the floor was sinking.

*Building No. 5, Machine shop.*—A boring mill of 96 feet diameter and one 8-foot planer were purchased; one 55 h.p. motor was installed.

*Building No. 6, Blacksmith shop.*—One new smoke stack was added and the exhaust box repaired. One 500 lbs. Beaudry power hammer was installed with a 10 h.p. motor. One 1,500 lbs. jib crane was also added to serve the new hammer and two forges.

*Building No. 17, Saw mill.*—Alterations were made to the sawdust exhaust pipe. A drain was made and an automatic water closet installed with building for same. One motor of 150 h.p. replaces the 100 h.p. motor used heretofore, and the 100 h.p. motor replaces a 55 h.p. one, so as to have ample power in the coldest weather.

The 55 h.p. motor has been removed to the machine shop.

*Building No. 14,* used as an oil shed, was removed and set up in rear of building No. 13, so as to leave a clear avenue along the shed No. 15.

The whole of the buildings were, as mentioned above, maintained in working order and painted.

*Ship-hauling ways.*—The old ways were put in order; some new timbers being placed.

The new ways of No. 2, had considerable repairs. Four cross beams built of steel and angles, were placed and the deep water pier was lengthened.



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The 30-ton crane installed over the railway tracks was equipped this year, with an auxiliary trolley for quicker motion with small loads, and also with raised platform for operating the winches.

An air compressor with a 35 h.p. dynamo, was placed in the boiler shop, and four transformers were installed in the power house, to supply current for the new motors of the punching machines, &c.

Besides the above, some work was performed for the Signal Service station at Sorel, and those at Three Rivers and Crabe Island stations.

The wharfs Nos. 1, 2 and 3 had ordinary repairs and on wharf No. 4, the wooden platform for the coal was extended as mentioned before.

In November and December, the whole dredging fleet returned to winter quarters at Sorel, with the exception of dredge No. 10 and tug *Champlain*, now the *Lanoraie*, which wintered in Montreal. There were also at the shipyard, *La Canadienne*, the *Shamrock*, the *Vercheres*, and the *Hosanna*, belonging to other branches of the government. All these vessels were placed in winter quarters, the ice cut around the vessels as needed, the winter roads were kept clear throughout the yard and the river front.

Following is a list of the different vessels on which work was performed:—

## REPAIRS TO VESSELS.

*Acetylene* (barge) was hauled on October 1, 1910, and an iron sheathing put on at the water line forward. Besides this, the barge underwent ordinary current repairs.

*Adelard* (scow).—A steam connection was made and installed for the sawing apparatus on board this scow, which belongs to the Construction of Lights Branch.

*The Alaska* (tug of the Sincennes-McNaughton line) was hauled July 26, 1910. Subsequently there were extensive repairs to the ways, as the vessel broke through the cross logs when being launched.

*Alpha* (a small covered steam launch).—This vessel was hauled November 21 for wintering. During the summer of 1910 there was some work done on the vessel to make her ready for a short cruise. During winter of 1911 a little caulking was done to her hull.

*Barge No. 1* had the ordinary maintenance repairs. During winter 1911 the guards were renewed and part of the deck was overhauled and caulked. One pair of davits was supplied to handle boat at the stern.

*Barge No. 2* was at the shipyard during winter 1911, and had repairs to wood-work only.

*Barge No. 3* had a revolving mooring head installed. She was hauled July 14, 1910, for repairs to her rudder. The hoisting engine had new piston rings and keys to eccentrics; the windlass was lifted so as to caulk the deck underneath and make it water tight. There were also light repairs during the winter.

*Barge No. 4* had repairs to boiler and steam connections in summer 1910. In winter 1911 repairs to guards and deck.

For *Bayfield* one pair of davits, 3" diameter x 13" long, were supplied.

*Bronx* (a gasoline launch).—In 1910, the hull was overhauled; part of the ribs and side planking were renewed. The boat also had ordinary maintenance.

*Carmelia* (tug).—During summer 1910, the masonry behind the boiler was rebuilt and the boiler tubes had to be repaired several times. The vessel was also hauled, on August 4, 1910 to receive a new propeller. During winter 1911 a new return tubular boiler was built and installed on board; the pipe connections were made anew and some light repairs to the machinery and hull.

*Cartier* (tug).—In winter 1911 had repairs to deck, aft. The guards and housing were also repaired; the lower part of the smoke box of the boiler was made new and the piston and link and thrust blocks were repaired.

*Champlain* (tug).—This tug is now known as the *Lanoraie*. In summer 1910 there were general repairs to the piping and connections. She was hauled twice, viz.: June 6 and October 26 for new propeller wheels, this tug having been at work in shallow water near Montreal.

*Coal Scow*.—This scow was overhauled and a railing with braces put around the deck so as to serve for coal transportation.

*Contrecoeur* (tug).—This vessel was completed at the shipyard in 1910 and put in commission in July to serve the new dredge No. 10. The boat was hauled on October 6 to place a larger screw propeller which better suited the power of her engines. During winter 1911, general repairs of light nature were made.

*Davis* (barge).—Had only ordinary repairs of unimportant nature.

*Daisy* (tug) of the Public Works Department was hauled July 26, 1910 for repairs to her stern tube and brackets.

*De Levis* (tug) was hauled June 17, 1910, for repairs to stern tube and rudder and shaft. She was also hauled on November 12, and a new right hand propeller wheel and right hand bracket were installed. The hull was painted in June and there were the ordinary maintenance repairs. During winter 1911 the rudder chains were overhauled, the deck caulked where found defective and the cotton duck covering of the upper deck was repaired and painted.

#### DREDGES.

*Dredge No. 1*.—There were some repairs to the buckets and one new lower tumbler was placed. Carpenters repaired the coamings, upper deck and the canvas covers. The deck guard and rails were also repaired, as well as the step of the A frame.

A new shaft was placed on the dynamo; a new casing to the boiler. The steam pipe connections were improved by making them of flanged pipes. The forward breasting winch had some repairs.

*Dredge No. 2*.—There were light repairs to piping and to search light and some caulking on the boiler during season of 1910.

During the winter 1911, buckets were repaired. The step of the 'A' frame and side fenders were repaired. The sides of hull and of well above water line were caulked.

A new 1½-inch wire cable was issued. There were the ordinary repairs to the machinery, the brackets of the ladder frame were rivetted anew. The smoke box fastening was renewed and the several boiler tubes were caulked.

*Dredge No. 3*.—The pipe connections were improved with cast steel flanges. A few deck planks were replaced during the season.

An upper tumbler casting was prepared during the summer to be installed the following winter.

During the winter, 1911, there were repairs to the buckets, the shoot and to the woodwork generally, also to the search light rheostat to main engines and to the stern and bow winches. The front of one boiler was caulked and the two connection chambers repaired.

*Dredge No. 4*.—During season 1910, there were current repairs to the steam piping, also to the frame of the main winch. A new lower tumbler for ladder frame was prepared at the yard and shipped to be installed on board.

During the winter of 1911, the buckets and bucket teeth were repaired, the wearing wooden sheathing on sides of ladder frame was renewed, the guards were repaired where needed.

The upper tumbler bearings were examined and babbitted. The lattice braces of the ladder frame were repaired. A new bush for lower tumbler was fitted. The winches and other machinery were overhauled, the dynamo armature was re-turned.

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A few of the boiler tubes were renewed; the steam piping was improved by having flanged connections instead of threaded ones. The electric wiring was renewed on half of the installation.

*Dredge No. 5.*—During the season of 1910, repairs to connections and search light were made.

During winter 1911, the sides of the well were strengthened by building a steel truss on each side of the same.

The guards were repaired and so was the shoot. The boiler on the port side was lifted and repaired, the smoke box had new fastenings and the studs were renewed.

One new boat was supplied and one repaired.

*Dredge No. 6.*—During season of 1910, repairs were made to boiler and connections. One lower tumbler bush was fitted and one new upper tumbler installed to replace one which had been in use several years.

During winter of 1911, 10 new buckets were made for this dredge and others were repaired, also new shoot plates (steel castings). The lower sides of boilers were repaired and several tubes removed in order to insure thorough cleaning. On the steam connections the flanged pipes were placed instead of threaded ones.

*Dredge No. 7.*—During the summer of 1910, the boilers had to be caulked on several occasions. One set of Diamond jet blowers was put on one of the boilers. The search light and dynamo were repaired.

During summer, four additional lengths, each 100 feet of the 30-inch discharge pipe were completed. In November, 1910, all the discharge pipes, 26 in number, were hauled on the ways; the wearing plates renewed on 8 lengths of the pipes. Others were repaired, woodwork and springs overhauled and rubber sleeves put in order.

The centrifugal sand suction pump was beginning to show appreciable wear, so that a cast steel lining in sections for the inside of the volute was cast on accurate models, and bolted to the outer shell. The lining consists of 65 pieces weighing together 10,285 lbs.

Important improvements to the set of four boilers of this dredge were also determined upon and begun. Eleven new corrugated furnaces were imported and the mode of connecting them with the combustion chambers was changed, thereby avoiding excessive thickness of metal at the inner end of the furnaces. The material for these alterations and also for the installation of a Howden draft system, was ordered and considerable work done on same before end of fiscal year. The machinery of the dredge was put in order as usual.

*Dredge No. 8.*—Two gypsy heads for the windlass, two brass check valves for the boilers were supplied; the 1½-inch wire rope was renewed.

During the winter 1911, the work of painting the inside of the hull was continued. The chain lockers were cleaned and painted, also the bulkheads, the bilges and the intermediate spaces below and around the hoppers, thus completing the painting of the hull inside. A wooden floor was made for the dynamo room in order to prevent the dust from the cement floor to injure the electrical machinery.

The cutter head blades were rivetted anew and the cutter head machinery overhauled. Two sets of Diamond jet blowers were installed on the boilers. Four ventilating cowls were lengthened so as to give better ventilation to boiler room.

The spare feed pump was connected to all bilge pumps so as to allow the pumps to be used alternately. A direct steam connection for dynamo engine as well as exhaust pipes, were installed, in view of ensuring better regulation of the dynamo which previously had the steam from the same pipe as main and cutter head engines, causing considerable fluctuation in pressure.

*Dredge No. 9.*—Two new leather dredging sleeves were imported from Germany, of which one is kept on hand to replace the present sleeve when completely worn.

Winter of 1911, one new dynamo was installed, capable of supplying 150 lamps instead of 60, as heretofore.



The forecastle winch was lifted in order to get at the deck and make it water tight under the winch.

The crane truck of suction pipe was repaired, and the trunnions turned. The steering arrangement was repaired. The upper deck was caulked around the deck houses. The inside of the deck houses, galley, dining room, &c., were painted inside.

During the same winter, 130 plain and stay boiler tubes were renewed; one-fifth of the condenser tubes were renewed. A new set of plates was prepared for the inside of the turbine pump. Ordinary maintenance of dredge was attended to.

*Dredge No. 10.*—This dredge was built at the shipyard under No. 19. The vessel was put in commission in July, 1910, and a few improvements carried on, after operating for some time. The 8-yard bucket was repaired; the lip having been broken, had to be replaced. A new bale was also supplied. A spud keeper was placed so as to hold and guide the stern spud. Two new valves were made on plans of the consulting engineer, Mr. Kennedy, and installed. The bases of the friction levers were strengthened.

This dredge wintered at Montreal, and little was done to her machinery during the winter of 1911.

*Emilia* (tug).—The smoke box of boiler was repaired and also the piping. One twenty barrel raft was supplied in connection with service of dredge. The vessel was hauled on September 15, 1910, to repair the stern tube. The steering gear of tug *Lac St. Pierre* was installed on board. There were ordinary repairs to deck and engines.

*Falken* (Lightship southeast shoal No. 18).—The adapting of this vessel for lightship service was completed. The deck, hull and deck houses were painted. A submarine signal bell was installed and also an automatic whistling arrangement.

Two lifeboats and chucks were provided. A sanitary system was installed. A new railing was made; the hull inside the cargo space forward, was cemented and cross bunkers built. The deck was equipped, the rigging of masts was overhauled. Signal bells were made, and tackle provided for manœuvring the lanterns and signal bells. Anchors were supplied.

On May 6, the vessel was hauled on the ways, to scrape the bottom and paint the hull and overhaul the rudder; a windlass was also installed. The vessel left under her own steam to reach her station on Lake Erie, on May 10, 1910.

*Floating machine shop.*—This scow has no steam, the forge machinery being run by gasoline engine. The blacksmith and helpers live on board. A hot air heating arrangement was prepared and placed below deck, in fall of year 1910.

During the winter, 1911, the vessel received a coat of paint.

*Frontenac* (Survey tug).—The repairs of summer, 1910, were to the rudder chains, electric bells, also to bridges in the boiler furnaces. The boat was painted once during the summer.

During winter, 1911, two 25 gallons gasoline tanks were made, the hull above water line and the deck were caulked. The guards and rail were repaired. The steam windlass of the *James Howden* was installed on board the *Frontenac*.

The engines were overhauled, the bell wiring was put in order, and there were the ordinary repairs to the machinery and boilers.

*Hosanna* (tug).—In spring of 1910 the vessel was launched after wintering on the ways, where the hull had been partly rebuilt. One boat was supplied.

During the summer there were only light repairs.

*Iberville* (tug).—In summer, 1910, one awning was supplied for the deck astern. There were repairs to steam connections and to bridges in the boilers. One hand wheel and added to the steam steering gear.

In winter, 1911, the guards and coamings were repaired, the bottom of the water pan of the boiler was also repaired.

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*James Howden* (tug).—The electric bells were overhauled. The galley floor was repaired and also the pony pump. Some stay rods were caulked in the boiler.

The vessel was hauled on November 28, for wintering. In winter, 1911, the stem of the vessel was repaired. The hull and deck were caulked throughout. A new windlass of the shipyard pattern was placed on board, and the old one was removed to another tug. There were also ordinary repairs to the machinery and boiler.

*Jessie Hume* (tug).—A new awning for the deck astern was supplied. There was caulking done on the boiler and repairs to hull around the rudder post. The vessel was hauled September 23, to install a new shaft and new stern tube. The brackets were repaired and also the rudder shoe and bracket.

In winter 1911, the railing and guards were repaired, the deck caulked and a few planks renewed. Ordinary repairs were made to the machinery.

C.G.S. *La Canadienne*, was brought to the shipyard after going out of commission. The work on this boat has simply been caretaking.

*Lac St. Pierre* (tug).—Mud catcher for boiler was placed and there was caulking done to the boiler. The vessel was hauled once on April 26, to place new propeller wheel and repair the rudder. She was also hauled on May 16, for another new propeller wheel after meeting with an accident.

In winter 1911, the guards and stanchions on the port side were repaired. A new awning supplied. There were also general repairs to the machinery, pistons eccentric-bands, pipe connections and also to the boiler.

C.G.S. *Lady Grey*.—Work in the summer of 1910. The repairs consisted in overhauling the engine telegraph, painting the hull and davits and fixing the electric system. This vessel having worked all winter at ice breaking, the overhauling of the machinery was done at Sorel during June, 1910.

The whole machinery was put in good order and a set of three new propeller blades was supplied. Four doubling plates of about 50 feet in length on each side of the bow, were added to strengthen the vessel at water line.

The hull received two coats of paint. The vessel, not having wintered at Sorel, no work was done on her by the shipyard in 1911, before end of fiscal year.

*Maisonnette* (yacht).—During the summer 1910, brass propeller wheel was supplied. The vessel was hauled for wintering in November, 1910.

The following repairs were made:—the seams were caulked with cotton and lead. The bowsprit was repaired and also the deck, skylight and railing. There were repairs to the feed pipe and some new link pins and a new set of grates. The rest of the machinery was overhauled and a new rose on the intake for the boiler feed was put on.

*Scow Lenore*.—Which does service with the *Maisonnette*, was also brought here for winter. The seams were caulked and windlass was overhauled and two guys added to the derrick mast. The railing was repaired and also the house woodwork, a new window being added. One new low guard along the edge of the deck, was added and the derrick was furnished with a new boom. Iron sheathing at water line was placed at the stern and bow of the boat. She was launched at high water, in the spring.

*Monitor* (tug).—Of the Public Works Department, had her rudder stock repaired and light repairs to piping.

*Montcalm* (tug).—There were repairs to the W.C., to the steering gear and to the main engine. Two brass plugs were inserted in the boiler for cleaning purposes, the vessel was hauled July 19, 1910, to secure wheel on shaft and repair lignum vitæ in the stern tube. A shaft was straightened and the hull painted. This vessel's name has been altered to the *Lotbinière* under which it is now known.

In winter of 1911, the steering gear was repaired and there were light repairs to the woodwork and general repairs to the machinery, condenser and piston rod. The boiler was caulked in a few places.

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*C.G.S. Montmagny*.—The vessel was completed, outfitted, furnished, painted and put in commission, leaving Sorel on July 3. Since that, drawings for new propeller blades were prepared and a gasoline launch repaired for the *Montmagny*.

*Montmorency* (yacht).—The vessel was hauled for the winter on November 17, 1910.

*Oswegatchie*, of Public Works Department had a new funnel and the dynamo and electric wiring overhauled.

*Ottawa* (dredge).—In 1910, spring repairs were made to this dredge, one sea cock for the ejector was repaired as well as the pumps.

*Ottawa* (tug).—The *Ottawa* was hauled on May 3 to alter her propeller, and on May 29 she was hauled again and a new propeller put on. On October 20, she was also hauled for repairs to tail shaft and placing new bracket for propeller shaft. The hull was painted on the same occasion.

*Portneuf* (tug).—In summer of 1910, had caulking of boiler, repairs to bridge and also repairs to deck houses. The vessel was hauled June 15 to place one new propeller, and on July 16 for the same cause and also repairing the shaft gland. One new smoke stack was placed on and there were ordinary repairs to the machinery, pumps, link-block, &c.

*Pontoons of Dredge No. 7*.—As mentioned above, these pontoons were hauled out and put in good condition.

## SCOWS.

During the season the following scows were hauled: *No. 1*, twice; *No. 6*, twice; *No. 8*, once; *No. 9*, once; *No. 10*, twice; *No. 12*, once; *No. 13*, twice; *No. 14*, once; *Nos. 15, 17 and 21* once each.

All these vessels were hauled for repairs to the hull or hopper doors. All the other scows were also kept in working order throughout the season.

*Shamrock* (steamer).—During 1910, there were light repairs to the hull and machinery. One coat of paint was given in the spring. A powerful four-drum winch was installed. The vessel was hauled on August 19 to repair and strengthen the stern.

In winter 1911, one hawse pipe was renewed on the starboard side; all the rear sections of the guard were repaired. The canvas covering on the upper deck was also repaired. One room with two berths was partitioned off in forward hold. Light repairs were made to the machinery. One 18-foot boat was built and supplied.

*Sounding Scow No. 1* and floating shop were painted. *Sounding Scow No. 2* was also painted.

*Stone Lifter No. 2*.—During summer 1910, one new smoke stack was built and repairs were made to boiler. During winter 1911, the large stone grips were repaired.

On May 18, 1910, this stone lifter was hauled so as to caulk the hull and the sides of the well.

*Stone Lifter No. 3*.—This vessel was hauled November 25. A new boat 18 feet long was built and supplied to the stone lifter, and the winches were overhauled.

*Stone Lifter No. 4*.—Was used as a rock breaker during latter part of the season. Strong breasting winches were installed for the special work of rock breaking in strong current, and the vessel was maintained in good order generally throughout the season.

*Verchères* (tug).—Was hauled on June 23, 1910, for repairs to the stern bracket and the rudder. The hull was caulked and the boat was painted twice during summer 1910.



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During summer 1911, there were general repairs to the machinery, grinding of the pistons, overhauling the main engine and steering engine. One marine check valve was placed on the feed pipe and slight repairs made on the boiler.

A plan of the river front, opposite the shipyard, shows the position of the several vessels for wintering.

The financial statement submitted shows a total expenditure of \$1,174,749.55, covered by appropriations for River St. Lawrence ship channel, for improvements to dredging plant and by transfers of money from other appropriations for which work was performed at the shipyard.

The average force employed at the shipyard for the fiscal year was 853 men, daily, and varied from 800 to 930 per day, all told.

I have the honour, to be, sir,

Your obedient servant,

L. G. PAPINEAU,  
*Director of Shipyard.*



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|      |                          |           |      |   |              |
|------|--------------------------|-----------|------|---|--------------|
| 31.. | Scrap iron sales.....    | 2,157 33  | 31.. | Dominion lighthouse depot, Prescott.....        | 145 80       |
| "    | Stores and material..... | 37,361 67 | "    | Halifax agency.....                             | 21 00        |
| 31.. |                          |           | 31.. | St. John agency.....                            | 5,543 47     |
| "    |                          |           | "    | A. Lancôt, labour and material supplied.....    | 375 62       |
| "    |                          |           | 31.. | La Cité de Sorel.....                           | 288 22       |
| "    |                          |           | 31.. | Dominion Government Str. <i>Lady Grey</i> ..... | 8,222 34     |
|      |                          |           |      |   | 1,174,749 55 |

Sorel Shipyards, March 31, 1911.

M. A. BARIL, Accountant.

L. G. PAPINEAU,

Director of Shipyards.



## APPENDIX No. 5.

## STATEMENT of Expenditure for the fiscal year 1910-11.

| Service.  | Appropriation | Expenditure. | Balance.   | Overdrawn. |
|---|---------------|--------------|------------|------------|
|   | \$ cts.       | \$ cts.      | \$ cts.    | \$ cts.    |
| <b>Ocean and River Service—</b>   |               |              |            |            |
| Dominion steamers and icebreakers.....  | 710,000 00    | 643,593 95   | 66,406 05  |            |
| Examination of masters and mates.....   | 11,400 00     | 5,801 62     | 5,598 38   |            |
| Rewards for saving life, &c.....  | 55,000 00     | 55,406 59    |            | 406 59     |
| Investigation into wrecks.....  | 15,000 00     | 8,016 97     | 6,983 03   |            |
| Schools of navigation, expenses of.....   | 8,000 00      | 2,177 45     | 5,822 55   |            |
| Registration of shipping.....   | 2,000 00      | 1,049 86     | 950 14     |            |
| Removal of obstructions in navigable waters.  | 20,000 00     | 8,820 95     | 11,179 05  |            |
| Winter mail service.....  | 7,000 00      | 6,818 41     | 181 59     |            |
| Salaries and expenses of cattle inspection...   | 5,000 00      | 3,740 40     | 1,259 60   |            |
| Subsidy for wrecking plant, Quebec, Mari-<br>time Provinces, and British Columbia.... | 30,000 00     | 30,000 00    |            |            |
| Maintenance of vessels patrolling northern<br>waters, &c.....                         | 69,000 00     | 66,753 91    | 2,246 09   |            |
| Compensation to Major J. D. Moodie for<br>services in 1904-05.....                    | 1,000 00      | 1,000 00     |            |            |
| Unforeseen expenses.....  | 5,000 00      | 3,445 41     | 1,554 59   |            |
|   | 938,400 00    | 836,625 52   | 102,181 07 | 406 59     |
| <b>Public Works—chargeable to Capital—</b>  |               |              |            |            |
| River St. Lawrence ship channel.....  | 800,000 00    | 779,985 04   | 20,014 96  |            |
| Construction of dredging plant, Montreal to<br>Father Point.....                      | 250,000 00    | 249,980 91   | 19 09      |            |
| Purchase of yard property at Sorel.....   | 30,000 00     |              | 30,000 00  |            |
| Permanent piers in Lake St. Peter, &c.....  | 50,000 00     | 20,932 87    | 29,067 13  |            |
|   | 1,130,000 00  | 1,050,898 82 | 79,101 18  |            |
| <b>Lighthouse and Coast Service—</b>  |               |              |            |            |
| Agencies, rents and contingencies.....  | 50,000 00     | 40,205 74    | 9,794 26   |            |
| Salaries and allowances to lightkeepers.....  | 400,000 00    | 348,749 67   | 51,250 33  |            |
| Maintenance and repairs to lighthouses, &c..  | 750,000 00    | 707,485 42   | 42,514 58  |            |
| Services of H. Barrett, lifting buoys, &c.....  | 400 00        | 400 00       |            |            |
| Construction of Lighthouses, including West<br>Coast Trail.....                       | 1,000,000 00  | 418,049 36   | 368,103 18 |            |
| Construction of apparatus, &c.....  | 12,000 00     | 213,847 46   |            |            |
| Signal service.....   | 35,000 00     | 9,599 67     | 2,400 33   |            |
| Administration of pilotage, Str. <i>Eureka</i> ...                                    | 5,000 00      | 34,781 54    | 218 46     |            |
| Maintenance and repairs to wharfs.....  | 40,000 00     | 3,259 90     | 1,740 10   |            |
| Ice-breaking in Lake Superior, &c.....  | 24,000 00     | 36,060 00    | 3,940 00   |            |
| Telephonic reporting station below Montreal   | 1,000 00      | 20,978 18    | 3,021 82   |            |
| Repairs to Maritime Road, Gaspé.....  | 10,000 00     | 1,034 88     |            | 34 88      |
| Charter of steamer, Lime kiln Crossing.....   | 5,850 00      | 150 00       | 9,850 00   |            |
| Pension to retired pilots.....  |               | 4,922 72     | 927 28     |            |
| Telephones in connection with aids to navi-<br>gation.....                            | 10,000 00     |              | 10,000 00  |            |
| New lighthouse and buoy Steamer to replace<br><i>Shamrock</i> .....                   | 175,000 00    | 1,126 09     | 173,873 91 |            |
| New lighthouse and buoy steamer for Pacific<br>Coast.....                             | 200,000 00    | 3,726 43     | 196,273 57 |            |
| Allowance to Mrs. Elizabeth L. Kerr.....  | 4,100 00      | 4,100 00     |            |            |
| Compensation to Mr. Thos. Harling.....  | 500 00        | 560 60       |            |            |
|   | 2,722,850 00  | 1,848,977 06 | 873,907 82 | 34 88      |
| <b>Scientific institutions—</b>   |               |              |            |            |
| Meteorological service.....   | 139,300 00    | 129,594 49   | 9,705 51   |            |
| Magnetic observatory, Toronto.....  | 3,200 00      | 2,142 93     | 1,057 07   |            |
| Montreal observatory.....   | 500 00        | 500 00       |            |            |
| Kingston observatory.....   | 500 00        | 500 00       |            |            |
|   | 143,500 00    | 132,737 42   | 10,762 58  |            |
| <b>Marine hospitals—</b>  |               |              |            |            |
| Maintenance and repairs of marine hospitals   | 70,000 00     | 54,859 50    | 15,140 50  |            |
| Shipwrecked and distressed seamen.....  | 3,000 00      | 1,304 23     | 1,695 77   |            |
|   | 73,000 00     | 56,163 73    | 16,836 27  |            |

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STATEMENT of Expenditure for the fiscal year 1910-11—*Concluded.*

| Service.   | Appropriation | Expenditure. | Balance.     |
|--|---------------|--------------|--------------|
|  | \$ cts.       | \$ cts.      | \$ cts.      |
| Steamboat Inspection—  |               |              |              |
| Salaries and expenses of Steamboat Inspectors .....                  | 53,300 00     | 42,818 47    | 10,481 50    |
| Fisheries—   |               |              |              |
| Salaries and disbursements of Fishery officers.....                  | 220,000 00    | 181,078 28   | 38,921 72    |
| Salary of K. W. McKenzie as special guardian .....                   | 125 00        |              | 125 00       |
| Compensation to Fishery Overseer, Wm. Robichaud....                  | 2,400 00      | 2,400 00     |              |
| Fish breeding establishments.....                                    | 322,300 00    | 220,727 66   | 101,572 34   |
| Oyster Culture.....  | 10,000 00     | 4,026 68     | 5,973 32     |
| Cold Storage for bait, &c.....                                       | 40,000 00     | 11,231 49    | 28,768 51    |
| Dog-fish reduction works.....  | 60,000 00     | 46,486 61    | 13,513 39    |
| Canadian Fisheries exhibits .....                                    | 16,000 00     | 3,168 42     | 12,831 58    |
| Distributing of fishing bounty.....                                  | 6,000 00      | 4,881 73     | 1,118 27     |
| Building fishways.....   | 10,000 00     | 1,731 88     | 8,268 12     |
| Legal and incidental expenses .....                                  | 4,000 00      | 886 14       | 3,113 86     |
| Georgian Bay laboratory.....   | 2,000 00      | 1,150 45     | 849 55       |
| Marine biological station.....                                       | 15,000 00     | 8,549 98     | 6,450 02     |
| Transportation of fresh fish.....                                    | 50,000 00     | 48,141 97    | 1,858 03     |
| Fishery commission.....  | 15,000 00     | 9,603 97     | 5,396 03     |
| Services of officers <i>re</i> <i>modus vivendi</i> licenses .....   | 761 62        | 761 62       |              |
| Services of customs officers <i>re</i> fisheries intelligence bureau | 500 00        | 260 00       | 240 00       |
| International fisheries commission.....                              | 10,000 00     | 344 06       | 9,655 94     |
| Inquiry into rights, Federal and Provincial Governments              |               |              |              |
| <i>re</i> fisheries.....   | 10,000 00     |              | 10,000 00    |
| Settlement of British Columbia Government's claim for                |               |              |              |
| license fees collected in 1901-1907 .....                            | 6,137 60      | 56,137 00    |              |
|  | 850,223 62    | 601,567 94   | 248,655 68   |
| Civil Government salaries.....                                       | 255,450 00    | 203,702 49   | 51,747 51    |
| Contingencies .....  | 30,000 00     | 25,496 73    | 4,503 27     |
| Fishing bounty .....   | 160,000 00    | 159,166 75   | 833 25       |
| Recapitulation—  |               |              |              |
| Ocean and river service.....   | 938,400 00    | 836,625 52   | 101,774 48   |
| Public works, chargeable to capital.....                             | 1,130,000 00  | 1,050,898 82 | 79,101 18    |
| Lighthouse and coast services.....                                   | 2,722,850 00  | 1,848,977 06 | 873,872 94   |
| Scientific institutions.....   | 143,590 00    | 132,737 42   | 10,762 58    |
| Marine hospitals .....   | 73,000 00     | 56,163 73    | 16,836 27    |
| Steamboat inspection .....   | 53,300 00     | 42,818 47    | 10,481 53    |
| Fisheries.....   | 850,223 62    | 601,567 94   | 248,655 68   |
| Civil government salaries.....                                       | 255,450 00    | 203,702 49   | 51,747 51    |
| Contingencies.....   | 30,000 00     | 25,496 73    | 4,503 27     |
|  | 6,196,723 62  | 4,798,988 18 | 1,397,735 44 |
| Fishing bounty.....  | 160,000 00    | 159,166 75   | 833 25       |

## APPENDIX No. 6.

## STATEMENT of Revenue for fiscal year ended March 31, 1911.

| Service.  | Amount.     | Refunds.  | Total.     |
|---|-------------|-----------|------------|
|   | \$ cts.     | \$ cts.   | \$ cts.    |
| Harbours, piers and wharfs.....                                       | 21,821 15   | 491 50    | 21,329 65  |
| Dominion steamers—  |             |           |            |
| <i>Champlain.</i>   |             |           |            |
| Freight, \$1,805.99; passengers, \$4,925.81; meals, \$121.40; berths. | 6,853 20    |           |            |
| <i>Earl Grey.</i>   |             |           |            |
| Freight, \$8,740.45; passengers, \$3,731.75; meals, \$143.90; berths, |             |           |            |
| \$1,011.00.....   | \$13,627 10 |           |            |
| Less to be accounted for in 1911-12.....                              | 1,124 61    |           |            |
| <i>Minto.</i>   |             |           |            |
| Freight, \$2,975.82; passengers, \$1,807.25; meals, \$71.40; berths,  |             |           |            |
| \$423.00.....   | \$5,279 47  |           |            |
| Less overcharge on freight.....                                       | 33 94       |           |            |
|   | \$5,245 53  |           |            |
| Account belonging to fiscal year 1909-10.....                         | 963 00      |           |            |
|   | \$6,208 53  |           |            |
| To be accounted for in 1911-12.....                                   | 967 94      |           |            |
|   | 5,240 59    | 4 00      | 24,592 28  |
| Decayed pilots fund.....  | 5,206 61    |           | 5,206 61   |
| Steamboat inspection fund.....  | 4,083 60    |           | 4,083 60   |
| "    engineers fees.....  | 1,501 50    |           | 1,501 50   |
| Sick mariners fund.....   | 55,547 41   | 137 34    | 55,430 07  |
| Signal station dues.....  | 613 00      |           | 613 00     |
| Marine register fees.....   | 29 59       |           | 29 59      |
| Fines and forfeitures.....  | 851 43      | 540 00    | 311 43     |
| Examination masters and mates.....                                    | 4,446 61    | 15 00     | 4,431 61   |
| Winter mail service.....  | 152 00      |           | 152 00     |
| Civil service insurance.....  | 13 00       |           | 13 00      |
| Casual revenue, marine.....   | 37,305 92   | 508 09    | 36,797 83  |
| "    fisheries.....   | 29,913 12   |           | 29,913 12  |
| Fisheries revenue.....  | 95,969 38   | 10,184 30 | 85,785 08  |
| Modus vivendi.....  | 15,076 50   |           | 15,076 50  |
| Total.....  | 297,147 10  | 11,880 23 | 285,266 87 |



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FISHERIES revenue for fiscal year ended March 31, 1911.

| Province.                    | Amount<br>collected. | Refunds.  | Net revenue. |
|------------------------------|----------------------|-----------|--------------|
|                              | \$ cts.              | \$ cts.   | \$ cts.      |
| Ontario .....                | 280 25               |           | 280 25       |
| Quebec .....                 | 5,336 61             |           | 5,336 61     |
| New Brunswick .....          | 12,996 84            |           | 12,996 84    |
| Nova Scotia .....            | 7,749 60             |           | 7,749 60     |
| Prince Edward Island .....   | 2,499 63             |           | 2,499 63     |
| Manitoba .....               | 8,212 75             | 89 30     | 8,123 45     |
| Saskatchewan .....           | 1,246 00             |           | 1,246 00     |
| Alberta .....                | 698 50               |           | 698 50       |
| Hudson Bay Territory .....   | 100 00               |           | 100 00       |
| British Columbia .....       | 55,921 70            | 10,075 00 | 45,846 70    |
| Yukon .....                  | 927 50               | 20 00     | 907 50       |
| Total .....                  | 95,969 38            | 10,184 30 | 85,785 08    |
| Modus Vivendi Licenses ..... |                      |           | 15,076 50    |
| Grand total ....             | 95,969 38            | 10,184 30 | 100,861 58   |

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FOR the Year ended March 31, 1911, Minor Public Works—Revenue—Wharfs, Piers and Harbours.

| Locality.                 | Wharfinger.            | Date of appointment. | Remuneration allowed.                        | Net revenue. |
|---------------------------|------------------------|----------------------|--|--------------|
| <i>Ontario.</i>           |                        |                      | p.c.   | \$ cts.      |
| Blind River.....          | W. H. McGauley.....    | April 14, 1908..     | 50   | 790 12       |
| Brontè.....               | J. J. Wilson.....      | Oct. 26, 1905..      | 25   | 50 25        |
| Bruce Mines.....          | W. Flemming.....       | Apr. 15, 1902..      | 25   | 119 03       |
| Burke Falls.....          | A. J. Collins.....     | Feb. 28, 1907..      | 25   | 37 35        |
| Chute à Blondeau.....     | O. Cousineau.....      | May 28, 1909..       | 40   | 137 21       |
| Cockburn Island.....      | H. R. McAllister.....  | Apr. 18, 1907..      | 25   | 45           |
| Cooks Bay.....            | Chas. Kent.....        | May 28, 1909..       | 50   | 17 34        |
| Haileybury.....           | R. B. Jessup.....      | May 8, 1908..        | 25   | 515 08       |
| Honora.....               | G. E. Hawke.....       | May 12, 1909..       | 25   | 26 50        |
| Kingsville.....           | W. H. Black.....       | Aug. 1, 1902..       | 25   | 174 01       |
| L'Original.....           | E. A. Hall.....        | Mar. 23, 1904..      | 25   | 177 78       |
| Leamington.....           | J. E. Johnston.....    | May 11, 1906..       | 25   | 225 02       |
| Maganetawan.....          | Conard Ross.....       | Apr. 6, 1910..       | 25   | 37 95        |
| Midland.....              | J. Gates.....          | Oct. 26, 1905..      | 25   | 419 28       |
| Oshawa.....               | W. T. Henry.....       | Aug. 10, 1904..      | \$400 per annum.                             | 3 00         |
| Pélée Island.....         | H. Henderson.....      | Feb. 2, 1907..       | 25   | 242 85       |
| Pembroke.....             | T. Anderson.....       | Apr. 27, 1906..      | \$200 per annum.                             | 100 00       |
| Richard's Landing.....    | R. Armstrong.....      | June 10, 1907..      | 50   | 101 32       |
| Rondeau.....              | W. R. Fellows.....     | Dec. 17, 1893..      | 25   | 58 89        |
| Rosseau.....              | A. Monteith.....       | Aug. 6, 1908..       | 50   | 125 20       |
| Sault Ste Marie.....      | G. S. Boyd.....        | Apr. 30, 1901..      | \$100 per month during navigation season.... | 995 22       |
| Scudder's Wharf.....      | C. B. Quick.....       | July 29, 1909..      | 25   | 161 64       |
| Sheguiandah.....          | Wm. Stevens.....       | Nov. 8, 1910..       | 25   | 124 26       |
| Southampton.....          | Geo. McVittie.....     |                      | 25   | 421 75       |
| South Lancaster.....      | J. D. Perron.....      | May 6, 1907..        | 25   | 127 92       |
| Tenby Bay.....            | Jas. Bolt.....         | Dec. 13, 1909..      | 25   | 12 95        |
| Thessalon.....            | D. J. Sandle.....      | Apr. 22, 1902..      | 50   | 205 56       |
| Treadwell.....            | J. Smith.....          | May 18, 1909..       | 40   | 107 88       |
| Wendover.....             | H. Lacasse.....        | Jan. 14, 1907..      | 50   | 40 43        |
| Warton.....               | W. Gilbert.....        | Nov. 23, 1907..      | 25   | 250 50       |
|                           |                        |                      |  | 5,806 84     |
| <i>Montreal District.</i> |                        |                      |  |              |
| Cedars.....               | C. Laboursadiere.....  | May 27, 1907..       | 50   | 10 92        |
| Coteau du Lac.....        | H. Saluré.....         | Apr. 10, 1908..      | 50   | 15 97        |
| Coteau Landing.....       | Napoleon Beriault..... | June 29, 1910..      | 25   | 28 70        |
| Graham.....               | A. Bertrand.....       | Feb. 22, 1904..      | 25   | 43 16        |
| Hudson.....               | A. W. Mullen.....      | July 13, 1904..      | 50   | 78 18        |
| Ile Perrot Nord.....      | Orphie Legault.....    | May 30, 1910..       | 15   | 35 86        |
| Lacolle.....              | R. J. Robinson.....    | Mar. 6, 1894..       | 25   | 9 03         |
| Longueuil.....            | E. Denicourt.....      | May 15, 1901..       | 25   | 36 45        |
| Magog.....                | D. Peters.....         | June 15, 1906..      | 50   | 79 54        |
| MASSON.....               |                        |                      |  | 2 00         |
| Peel Head Bay.....        | S. N. Ray.....         |                      | 25   | 6 75         |
| Pointe Fortune.....       | Wm. Brown.....         | Apr. 26, 1910..      | 25   | 84 41        |
| Rigaud.....               | O. Mallette.....       |                      |  | 52 68        |
| Pointe à Valois.....      | L. Castonguay.....     |                      | 50   | 53 38        |
| St-Anicet.....            | S. Dupuis.....         | Sept. 14, 1896..     | 25   | 21 93        |
| St-Anne de Bellevue.....  | M. C. Bezner.....      | May 21, 1908..       | 50   | 183 05       |
| St-Zotique.....           | A. Bissonnette.....    | May 7, 1906..        | 25   | 11 33        |
| Vaudreuil.....            | J. A. Valois.....      | Apr. 21, 1910..      | 25   | 36 04        |
| Sorel Harbour.....        | J. A. Prouix.....      | June 6, 1901..       | \$400 per annum.                             | 100 00       |
|                           |                        |                      |  | 889 38       |

## SESSIONAL PAPER No. 21

For the Year ended March 31, 1911, Minor Public Works—Revenue—Wharfs, Piers and Harbours—Continued.

| Locality.                       | Wharfinger.            | Date of appointment. | Remuneration allowed.                            | Net revenue. |
|---------------------------------|------------------------|----------------------|--|--------------|
| <i>Quebec district.</i>         |                        |                      | p. c.  | \$ cts.      |
| Anse aux Gascons.....           | S. Chapados .....      | Feb. 16, 1905..      | 25   | 49 14        |
| Anse à L'Islet.....             | G. Mollog.....         |                      |  | 89 88        |
| Anse St-Jean.....               | F. Lavoie.....         | May 13, 1905..       | \$19 per annum..                                 | 66 03        |
| Baie St-Paul.....               | E. Coude.....          | Oct. 26, 1905..      | \$32 per annum..                                 | 63 00        |
| Beauport.....                   | P. Langlois.....       | Oct. 19, 1909..      | 50   | 33 48        |
| Berthier.....                   | J. Blais.....          | Nov. 7, 1905..       | 50   | 104 75       |
| Carleton.....                   | B. Leclerc.....        | June 13, 1905..      | \$50 per annum..                                 | 40 60        |
| Cap à l'Aigle.....              | A. Dufour.....         | May 11, 1906..       | \$18 per annum..                                 | 40 00        |
| Chicoutimi.....                 | T. Tremblay.....       | May 23, 1901..       | \$122 per annum..                                | 493 91       |
| Grand River.....                | G. Beaudin.....        | Nov. 16, 1896..      | 25   | 174 53       |
| Grindstone.....                 | J. Ballantyne.....     | Dec. 22, 1909..      | 25   | 321 72       |
| Les Eboulements.....            | Capt. T. Tremblay..... | June 23, 1910..      | \$29 per annum..                                 | 62 00        |
| L'Islet.....                    | Under lease .....      |                      |  | 25 00        |
| Matane.....                     | L. J. Thériault.....   | Feb. 11, 1911..      | 50   | 184 28       |
| Murray Bay.....                 | J. Gagnon.....         | May 16, 1906..       | \$40 per annum..                                 | 168 60       |
| New Carlisle.....               | J. Chisholm.....       | Apr. 22, 1902..      | 25   | 107 59       |
| Paspébiac.....                  | Julien DeCaen.....     | Feb. 22, 1908..      | 50   | 70 83        |
| Percé.....                      | E. Bourget.....        | Mar. 11, 1903..      | 25   | 244 04       |
| Port Daniel.....                | F. X. Gagnon.....      | Feb. 26, 1907..      | \$50 per annum..                                 | 10 41        |
| Rimouski.....                   | N. Lavoie.....         | Mar. 27, 1907..      | 50   | 87 59        |
| Rivière du Loup.....            | L. J. Puize.....       | Nov. 7, 1905..       | \$146 per annum..                                | 413 62       |
| St. Alphonse de Bagotville..... | F. Fortier.....        | Apr. 20, 1909..      | \$48 per annum..                                 | 150 45       |
| St. Cécil du Bic.....           | J. Santerre.....       | May 28, 1909..       | 25   | 44 25        |
| St. Irénée.....                 | G. Bouchard.....       | Feb. 10, 1903..      | 25   | 6 95         |
| St. Jean d'Orléans.....         |                        |                      | 50   | 80 00        |
| St. Laurent d'Orléans.....      | G. Godbout.....        | May 11, 1904..       | 50   | 26 00        |
| St. Nicholas.....               | Under lease .....      |                      |  | 25 00        |
| St. Siméon.....                 | L. Savard.....         | May 7, 1908..        | 25   | 24 09        |
| St. Thomas de Montmagny.....    | H. Dionne.....         | Oct. 22, 1896..      | 25   | 71 40        |
| Tadousac.....                   | A. Gingras.....        | May 29, 1906..       | \$30 per annum..                                 | 119 41       |
| <i>New Brunswick.</i>           |                        |                      |  | \$3,403 49   |
| Anderson's Hollow.....          | H. T. Copp.....        | May 30, 1910..       | 25   | 145 17       |
| Black River.....                | F. G. McLeod.....      | Sept. 26, 1907..     | 25   | 40 06        |
| Campbellton.....                | G. E. Asker.....       | May 11, 1904..       | 25   | 1,923 84     |
| Cape Tormentine.....            | M. B. Rielly.....      | June 23, 1905..      | 25   | 364 34       |
| Caraguet.....                   | R. Friolet.....        | Sept. 11, 1906..     | 25   | 43 76        |
| Dalhousie.....                  | W. S. Smith.....       | June 27, 1891..      | 25   | 466 33       |
| Gardner's Creek.....            | J. J. Armstrong.....   | Dec. 22, 1909..      | 25   | 19 50        |
| Hopewell Cape.....              | G. D. Wilson.....      | Apr. 10, 1899..      | 25   | 28 26        |
| Lamèque.....                    | N. Chiasson.....       | Nov. 28, 1906..      | 25   | 36 14        |
| Petit Roche.....                | J. Boudreau.....       | Aug. 27, .....       | 25   | 11 74        |
| St-John.....                    | E. C. Elkin.....       | Nov. 18, 1910..      | 25 (not to exceed \$1,500 in any calendar year). | 633 30       |
| Shippegan.....                  | G. J. Henry.....       | Apr. 6, 1910..       | 25   | 34 28        |
| Tracadie.....                   | Louis Breau.....       | Oct. 12, 1910..      | 25   | 32 02        |
| <i>Nova Scotia.</i>             |                        |                      |  | \$3,778 74   |
| Babin's Cove.....               | A. Thomas.....         | Oct. 20, 1897..      | 25   | 14 31        |
| Barrington.....                 | J. H. Christie.....    | Aug. 31, 1896..      | 25   | 84 30        |
| Bayfield.....                   | R. Grant.....          | Apr. 23, 1902..      | 25   | 11 43        |
| Bear Point.....                 | J. Smith.....          | May 23, 1902..       | 25   | 3 35         |
| Belliveau Cove.....             | S. C. Thériault.....   | Nov. 24, 1892..      | 25   | 92 60        |
| Black Point.....                | J. P. Littlewood.....  | Jan. 8, 1904..       | 25   | 20 24        |
| Bridgewater harbour.....        | W. Oakes.....          | Jan. 28, 1896..      | \$100 per annum..                                | 52 00        |
| Brooklyn.....                   | J. McLeod.....         | Aug. 3, 1904..       | 25   | 60 43        |
| Canada Creek.....               | H. Dickey.....         | Aug. 12, 1899..      | 25   | 6 84         |
| Canso.....                      |                        |                      |  | 14 16        |
| Cape Cove.....                  | B. Doucette.....       | Feb. 8, 1907..       | 25   | 17 55        |



2 GEORGE V., A. 1912

For the Year ended March 31, 1911, Minor Public Works—Revenue—Wharfs, Piers and Harbours—Continued.

| Locality.                       | Wharfinger.            | Date of appointment. | Remuneration allowed. | Net revenue. |
|---------------------------------|------------------------|----------------------|-----------------------|--------------|
| <i>Nova Scotia—Continued.</i>   |                        |                      | p. c.                 | \$ cts.      |
| Centreville.....                | A. Ward .....          | May 23, 1897..       | 25                    | 94 62        |
| Church Point.....               | L. Bellevau.....       | Mar. 26, 1907..      | 25                    | 59 17        |
| Cranberry Head.....             |                        |                      |                       | 5 25         |
| Deep Brook.....                 | C. D. Ray.....         |                      |                       | 4 47         |
| Delap's Cove.....               | R. W. McCaul.....      | Nov. 28, 1889..      | 25                    | 3 81         |
| D'Escousse.....                 | Leon Poirier.....      | May 31, 1906..       | 25                    | 54 33        |
| Digby.....                      | W. W. Hayden.....      | April 20, 1897..     | 25                    | 2,870 38     |
| Freeport.....                   | J. Fairfield.....      | March 3, 1911..      | 25                    | 48 74        |
| Granville Centre.....           | H. Rooney.....         | July 6, 1903..       | 25                    | 97 80        |
| Hall's Harbour.....             | T. A. Neville.....     | Jan. 8, 1897..       | 25                    | 68 81        |
| Hampton.....                    | C. Dunn.....           | Dec. 22, 1906..      | 25                    | 18 91        |
| Harbourville.....               | L. D. Curry.....       | Dec. 29, 1906..      | 25                    | 32 16        |
| Horton Landing.....             | F. G. Curry.....       | April 30, 1898..     | 25                    | 9 61         |
| International Pier Harbour..... | M. J. Neville.....     | Oct. 30, 1880..      | \$300 per annum.      | 16 50        |
| Isaac's Harbour.....            | T. D. Cook.....        | Jan. 30, 1902..      | 25                    | 9 84         |
| East Jeddore.....               | Enos Parker.....       | May 9, 1910..        | 25                    | 18 69        |
| Jordan Bay.....                 | J. Fredericks.....     | Feb. 20, 1900..      | 25                    | 29 39        |
| Lunenburg Harbour.....          | J. B. Heckman.....     |                      |                       | 23 50        |
| Margaretsville.....             | D. H. McLean.....      | July 10, 1907..      | 25                    | 83 42        |
| Meteghan Cove.....              | M. S. Robichaud.....   | Dec. 7, 1909..       | 25                    | 16 81        |
| Meteghan River.....             | Antoine Melanson.....  | Sept. 26, 1910..     | 25                    | 13 82        |
| Morden.....                     | John Duggan.....       | April 7, 1910..      | 25                    | 6 92         |
| Newellton.....                  |                        |                      |                       | 29 14        |
| Oak Point.....                  | Under lease.....       |                      |                       | 200 00       |
| Owl's Head.....                 | David Palmer, jr.....  | March 22, 1910..     | 25                    | 16 04        |
| Parker's Cove.....              | Curtis Halliday.....   | Oct. 12, 1910..      | 25                    | 11 08        |
| Picketts.....                   | F. Eaton.....          | Aug. 2, 1899..       | 25                    | 60 34        |
| Port George.....                | O. Douglas.....        | June 26, 1900..      | 25                    | 34 65        |
| Port Hawkesbury.....            | F. McInnes.....        | March 20, 1907..     | 25                    | 379 22       |
| Port Hood.....                  |                        |                      |                       | 2 50         |
| Port Latour.....                | C. D. Cook.....        | Aug. 20, 1904..      | 25                    | 23 95        |
| Port Lorne.....                 | F. Beardsley.....      | June 22, 1897..      | 25                    | 39 49        |
| Port Morien.....                | D. F. McAuley.....     | Nov. 6, 1906..       | 7½                    | 550 30       |
| Port Mouton.....                | Geo. Cook.....         | Dec. 28, 1905..      | 25                    | 6 50         |
| Port Philip.....                | H. Johnson.....        | Sept. 3, 1909..      | 25                    | 9 87         |
| Port Wade.....                  | J. D. Apt.....         | Sept. 12, 1907..     | 25                    | 60 53        |
| Poulamond.....                  | B. Boudrot.....        | June 4, 1906..       | 25                    | 49 88        |
| Ray's Creek.....                |                        |                      |                       | 27 87        |
| Saulniersville.....             | J. F. Saulnier.....    | Aug. 25, 1888..      | 25                    | 9 53         |
| Shag Harbour.....               | A. Smith.....          | Oct. 28, 1909..      | 25                    | 7 80         |
| Swims Point.....                | J. T. Duncan.....      | Jan. 30, 1909..      | 25                    | 109 55       |
| Tiverton.....                   | B. Blackford.....      | Oct. 17, 1906..      | 25                    | 7 74         |
| West Arichat.....               | H. H. Sampson.....     | June 21, 1909..      | 25                    | 30 65        |
| West Head.....                  | H. N. Newell.....      | July 2, 1910..       | 25                    | 27 09        |
| West Pubnico.....               | C. C. D'Entremont..... | March 28, 1898..     | 25                    | 23 49        |
| Wolfville.....                  | J. L. Franklin.....    |                      | 25                    | 29 46        |
|                                 |                        |                      |                       | 5,710 89     |
| <i>Prince Edward Island.</i>    |                        |                      |                       |              |
| Aitken's Ferry.....             | B. Aitken.....         |                      |                       | 2 08         |
| Annapdale.....                  | W. C. Jenkins.....     | May 4, 1897..        | 25                    | 47 44        |
| Bay View.....                   | J. Harrington.....     | Oct. 2, 1885..       | 25                    | 27 21        |
| Belfast.....                    | F. Halliday.....       | May 1, 1901..        | 25                    | 26 17        |
| Brush Wharf.....                | H. H. McDonald.....    | April 21, 1910..     | 25                    | 13 73        |
| Chapel Point.....               | R. McCormack.....      | Sept. 18, 1885..     | 25                    | 23 65        |
| Charlottetown.....              | T. G. Taylor.....      | Agent of Dept.....   |                       | 218 93       |
| China Point.....                | W. S. N. Crane.....    |                      | 25                    | 31 52        |
| Clifton.....                    | J. Gunn.....           | May 4, 1900..        | 25                    | 10 78        |
| Capaud & Victoria.....          | E. McKinnon.....       | July 7, 1897..       | 25                    | 248 02       |
| Georgetown.....                 | R. R. Jenkins.....     | Oct. 14, 1892..      | 25                    | 8 49         |
| Haggerty's.....                 | C. Fisher.....         | March 27, 1908..     | 25                    | 7 20         |
| Hickey's.....                   | M. Webster.....        | Oct. 28, 1896..      | 25                    | 28 80        |
| Higgin's Shore.....             | G. G. Henry.....       |                      |                       | 2 16         |
| Hurd's Point.....               | T. Montgomery.....     | Aug. 16, 1901..      | 25                    | 90 33        |

## SESSIONAL PAPER No. 21

For the Year ended March 31, 1911, Minor Public Works—Revenue—Wharfs, Piers and Harbours—*Concluded.*

| Locality.                                 | Wharfinger.          | Date of Appointment. | Remuneration allowed. | mount.    |
|---|----------------------|----------------------|-----------------------|-----------|
| <i>Prince Edward Island.—Con.</i>         |                      |                      | p. c.                 | \$ cts.   |
| Kier's Shore .....                        | W. Hodgson .....     | June 10, 1895..      | 25                    | 86 50     |
| Lambert & Stevens.....                    | W. S. Johnston.....  | May 3, 1900..        | 25                    | 8 77      |
| Lewis Point .....                         | H. McCormack.....    | Nov. 6, 1908..       | 25                    | 15 06     |
| Lower Montague.....                       | B. Aitken.....       | Dec. 22, 1909..      | 25                    | 3 41      |
| Mount Stewart.....                        | B. Pigott.....       | Jan. 17, 1910..      | 25                    | 24 42     |
| McPherson's Cove.....                     | J. L. McPherson..... | Nov. 6, 1906..       | 25                    | 6 34      |
| Murray Harbour North.....                 | B. Richards.....     | Jan. 19, 1909..      | 25                    | 6 32      |
| North Cardigan.....                       | R. J. Steele.....    | May 1, 1901..        | 25                    | 39 83     |
| Pownal .....                              | M. M. Haley.....     | Oct. 13, 1896..      | 25                    | 44 32     |
| St. Mary's Bay.....                       | G. H. Hicken.....    | June 11, 1910..      | 25                    | 17 04     |
| South Rustico.....                        | D. Gallant.....      | .....                | 25                    | 9 60      |
| Sturgeon Pier.....                        | N. Randall.....      | Dec. 31, 1908..      | 25                    | 27 33     |
| Tignish.....                              | A. J. Gaudet.....    | Aug. 23, 1898..      | 25                    | 17 57     |
| Vernon River, .....                       | W. M. Forbes.....    | Apr. 22, 1902..      | 25                    | 65 00     |
| Wood Island.....                          | Jas. Young.....      | Apr. 10, 1899..      | 25                    | 1 49      |
| <i>Manitoba.</i>                          |                      |                      |                       | 1,159 51  |
| Selkirk.....                              | E. Comber .....      | .....                |                       | 570 03    |
| <i>British Columbia.</i>                  |                      |                      |                       | 570 03    |
| Comox, Harbour.....                       | G. H. Roe.....       | Apr. 25, 1896..      | \$200 per annum.      | 30 50     |
| Ladysmith.....                            | T. D. Conway.....    | .....                | 25                    | 14 28     |
| Nanaimo Harbour.....                      | Jas. Knarston.....   | Oct. 26, 1905..      | \$500 per annum.      | 95 00     |
| Sidney Harbour.....                       | C. C. Cochrane.....  | Nov. 25, 1910..      | 25                    | 111 99    |
| Vancouver Harbour.....                    | M. McLeod.....       | Jan. 14, 1897..      | \$600 per annum.      | 105 50    |
| Victoria Harbour.....                     | C. E. Clarke.....    | Nov. 3, 1894..       | \$600 per annum.      | 45 00     |
|   |                      |                      |                       | 502 27    |
| Recapitulation wharfage and harbour dues. |                      |                      |                       | Revenue.  |
|   |                      |                      |                       | \$ cts.   |
| Ontario.....                              |                      |                      |                       | 5,806 84  |
| Montreal District.....                    |                      |                      |                       | 889 38    |
| Quebec District.....                      |                      |                      |                       | 3,403 49  |
| New Brunswick.....                        |                      |                      |                       | 3,778 74  |
| Nova Scotia.....                          |                      |                      |                       | 5,710 89  |
| Prince Edward Island.....                 |                      |                      |                       | 1,159 51  |
| Manitoba.....                             |                      |                      |                       | 570 03    |
| British Columbia.....                     |                      |                      |                       | 502 27    |
| Grand Total.....                          |                      |                      |                       | 21,821 15 |

2 GEORGE V., A. 1912

STATEMENT of Sick Mariners' Dues collected during the fiscal year ended  
March 31, 1911.

| Nome of Port.              | Amount.   | Name of Port.                     | Amount.   |
|----------------------------|-----------|-----------------------------------|-----------|
| PROVINCE OF QUEBEC.        | \$ cts.   | PROVINCE OF NOVA SCOTIA—Con.      | \$ cts.   |
| Gaspé.....                 | 111 66    | Parrsboro.....                    | 468 99    |
| Montreal.....              | 5,310 85  | Pictou.....                       | 90 11     |
| Paspebeac.....             | 243 08    | Port Hawkesbury.....              | 145 35    |
| Percé.....                 | 47 33     | Port Hood.....                    | 41 73     |
| Quebec.....                | 6,461 43  | Shelburne.....                    | 25 46     |
| Rimouski.....              | 194 75    | Sydney.....                       | 1,980 79  |
| St. John's.....            | 1,454 23  | Weymouth.....                     | 202 60    |
| Sorel.....                 | 46 68     | Windsor.....                      | 958 64    |
| Three Rivers.....          | 245 92    | Yarmouth.....                     | 416 57    |
| Total.....                 | 14,115 93 | Total.....                        | 15,551 83 |
| PROVINCE OF NEW BRUNSWICK. |           | PROVINCE OF PRINCE EDWARD ISLAND. |           |
| Bathurst.....              | 80 45     | Charlottetown.....                | 291 12    |
| Campbellton.....           | 286 76    | Summerside.....                   | 62 81     |
| Chatham.....               | 894 08    | Total.....                        | 353 93    |
| Dalhousie.....             | 450 83    | PROVINCE OF BRITISH COLUMBIA.     |           |
| Fredericton.....           | 33 66     | Nanaimo.....                      | 5,113 07  |
| Moncton.....               | 474 89    | New Westminster.....              | 212 40    |
| Newcastle.....             | 193 04    | Prince Rupert.....                | 335 63    |
| St. Andrews.....           | 50 94     | Vancouver.....                    | 1,860 53  |
| St. John.....              | 7,123 64  | Victoria.....                     | 8,311 04  |
| St. Stephens.....          | 40 15     | Total.....                        | 15,832 67 |
| Sackville.....             | 84 61     | GRAND TOTALS BY PROVINCES.        |           |
| Total.....                 | 9,713 05  | Quebec.....                       | 14,115 93 |
| PROVINCE OF NOVA SCOTIA.   |           | New Brunswick.....                | 9,713 95  |
| Amherst.....               | 361 97    | Nova Scotia.....                  | 15,551 83 |
| Annapolis.....             | 261 37    | British Columbia.....             | 15,832 67 |
| Arichat.....               | 11 32     | Prince Edward Island.....         | 353 93    |
| Baddeck.....               | 50 44     | Grand total.....                  | 55,567 41 |
| Barrington.....            | 19 11     |                                   |           |
| Canso.....                 | 61 85     |                                   |           |
| Digby.....                 | 105 78    |                                   |           |
| Glace Bay.....             | 5 43      |                                   |           |
| Halifax.....               | 8,843 10  |                                   |           |
| Kentville.....             | 32 89     |                                   |           |
| Liverpool.....             | 72 67     |                                   |           |
| Lockeport.....             | 5 87      |                                   |           |
| Lunenburg.....             | 471 65    |                                   |           |
| North Sydney.....          | 938 14    |                                   |           |



## SESSIONAL PAPER No. 21

STATEMENT of Steamboat Inspection Dues collected for the fiscal year ended March 31, 1911.

| Name of Port.            | Amount.  | Name of Port.                 | Amount.  |
|--------------------------|----------|-------------------------------|----------|
| PROVINCE OF ONTARIO.     | \$ cts.  | PROVINCE OF BRITISH COLUMBIA. | \$ cts.  |
| Sault Ste. Marie .....   | 45 68    | Vancouver.....                | 576 72   |
| Windsor.....             | 138 40   | Victoria.....                 | 262 86   |
|                          | 184 08   |                               | 839 60   |
| PROVINCE OF QUEBEC.      |          |                               |          |
| Montreal.....            | 30 40    | Ontario.....                  | 184 08   |
| Quebec.....              | 297 12   | Quebec.....                   | 327 52   |
|                          | 327 52   | Nova Scotia.....              | 2,732 40 |
|                          |          | British Columbia.....         | 839 60   |
| PROVINCE OF NOVA SCOTIA. |          | Total.....                    | 4,083 60 |
| Halifax.....             | 2,222 88 |                               |          |
| Kentville.....           | 419 12   | Engineers' Certificates.....  | 1,501 50 |
| North Sydney.....        | 92 40    |                               |          |
|                          | 2,732 40 | Grand total.....              | 5,585 10 |

## MARINE Register Fees.

| Name of Port.              | Amount. | Name of Port.                 | Amount. |
|----------------------------|---------|-------------------------------|---------|
| PROVINCE OF ONTARIO.       | \$ cts. | PROVINCE OF BRITISH COLUMBIA. | \$ cts. |
| Ottawa.....                | 1 00    | Victoria.....                 | 3 04    |
| Total.....                 | 1 00    | Total.....                    | 3 04    |
| PROVINCE OF QUEBEC.        |         |                               |         |
| Montreal.....              | 3 95    | PROVINCE OF P. E. ISLAND.     |         |
| Paspebiac.....             | 45      | Charlottetown.....            | 1 20    |
| Quebec.....                | 9 04    | Total.....                    | 1 20    |
| Total.....                 | 13 43   |                               |         |
| PROVINCE OF NEW BRUNSWICK. |         |                               |         |
| St. John.....              | 1 88    | DISTRICT OF YUKON.            |         |
| Total.....                 | 1 88    | Dawson.....                   | 50      |
|                            |         | Total.....                    | 50      |
| PROVINCE OF NOVA SCOTIA.   |         |                               |         |
| Arichat .....              | 20      | TOTALS BY PROVINCES.          |         |
| Halifax.....               | 2 80    | Ontario.....                  | 1 00    |
| Liverpool.....             | 1 30    | Quebec.....                   | 13 43   |
| Lunenburg.....             | 3 20    | Newbrunswick.....             | 1 48    |
| Shelburne.....             | 44      | Nova Scotia.....              | 8 14    |
| Yarmouth.....              | 20      | Manitoba.....                 | 40      |
| Total.....                 | 8 14    | British Columbia.....         | 3 04    |
| PROVINCE OF MANITOBA.      |         | Prince Edward Island.....     | 1 20    |
| Winnipeg.....              | 40      | Yukon District.....           | 50      |
| Total.....                 | 40      | Grand total.....              | 29 59   |

2 GEORGE V., A. 1912

STATEMENT of Receipts from the Lighthouse and Coast Service of Canada for the fiscal year ended March 31, 1911.

| Name of Port.            | Amount. |
|--------------------------|---------|
| PROVINCE OF NOVA SCOTIA. | \$ cts. |
| Halifax.....             | 613 00  |
| Total.....               | 613 90  |

## HARBOUR MASTERS.

TABLE showing the names of ports proclaimed under certain Dominion Acts, the provisions of which are found in the Canada Shipping Act, Chapter 113, Revised Statutes of Canada, 1906, for the appointment of harbour masters and date of their appointment, the amount which each of their salaries is not to exceed, the amount of fees collected by each of them during the calendar year ended December 31, 1910, and the overplus, if any, paid to the credit of the Receiver General.

## PROVINCE OF ONTARIO.

| Names of Ports.        | Harbour Masters.       | Date of appointment. | Amount collected. | Remuneration allowed. | Amount paid to Cr. R. G. |
|------------------------|------------------------|----------------------|-------------------|-----------------------|--------------------------|
|                        |                        |                      | \$ cts.           | \$ cts.               | \$ cts.                  |
| Amherstburg.....       | M. Barrett.....        | Dec. 29, 1906.       | 16 00             | 200 00                |                          |
| Bronté.....            | Jas. Wilson.....       | Oct. 26, 1905.       | 2 00              | 200 00                |                          |
| Byng Inlet, North..... | Chas. Begin.....       | Mar. 24, 1908.       | 4 00              | 200 00                |                          |
| Collingwood.....       | Wm. F. Toner.....      | Dec. 1, 1908.        | 114 00            | 300 00                |                          |
| Depot Harbour.....     | Jno. O'Grady.....      | Apr. 18, 1910.       | 7 00              | 200 00                |                          |
| Fort William.....      | Jas. McAllister.....   | May 12, 1906.        | 339 50            | 600 00                |                          |
| French River.....      | E. Barron.....         |                      | 17 00             | 200 00                |                          |
| Goderich.....          | Donald McKay.....      | Apr. 21, 1908.       | 67 50             | 300 00                |                          |
| Little Current.....    | John T. May.....       | July 19, 1906.       | Nil.              | 200 00                |                          |
| Meaford.....           | S. McClain.....        | July 18, 1902.       | 8 50              | 200 00                |                          |
| Midland.....           | John White.....        | July 13, 1897.       | 57 50             | 300 00                |                          |
| Owen Sound.....        | W. T. Robertson.....   | May 29, 1909.        | 159 50            | 200 00                |                          |
| Oshawa.....            | Wm. T. Henry.....      | Aug. 10, 1904.       | Nil.              | 300 00                |                          |
| Parry Sound.....       | Basil Taylor.....      | April 27, 1909.      | 15 00             | 200 00                |                          |
| Penetanguishene.....   | Peter Light.....       | May 7, 1906.         | 20 50             | 200 00                |                          |
| Port Arthur.....       | B. Guirard.....        | May 21, 1897.        | 217 50            | 300 00                |                          |
| Port McNicoll.....     | Thomas Nothingham..... | May 1, 1911.         | Nil.              | 200 00                |                          |
| Port Stanley.....      | P. E. Shepard.....     | Jan. 15, 1898.       | Nil.              | 200 00                |                          |
| Rondeau.....           | W. R. Fellows.....     | Dec. 17, 1888.       | 26 50             | 100 00                |                          |
| Southampton.....       | W. H. Johnston.....    | Oct. — 1882.         | 39 50             | 100 00                |                          |
| Sarnia.....            | Albert McAdam.....     | May 3, 1886.         | Nil.              | 300 00                |                          |
| Trenton.....           | Ross Cummings.....     | Mar. 21, 1911.       | Nil.              | 200 00                |                          |

## PROVINCE OF QUEBEC.

|                       |                         |                |       |        |  |
|-----------------------|-------------------------|----------------|-------|--------|--|
| Amherst, M. J. ....   | Jno. Cassidy.....       | Sept. 2, 1878. | Nil.  | 200 00 |  |
| Anse aux Gascons..... | J. Mourant.....         | June 28, 1905. | Nil.  | 100 00 |  |
| Bersimis.....         | L. Thibault.....        | Dec. 13, 1905. | 7 00  | 200 00 |  |
| Bonaventure.....      | A. Bourque.....         | June 5, 1905.  | 26 00 | 100 00 |  |
| Carleton.....         | B. Leclerc.....         | May 15, 1905.  | Nil.  | 200 00 |  |
| Cape Cove.....        | J. Scott.....           | July 15, 1908. | Nil.  | 200 00 |  |
| Caplin.....           | T. Bourdages.....       | Mar. 20, 1907. | 5 00  | 100 00 |  |
| Chicoutimi.....       | A. Sturton.....         | June 8, 1886.  | Nil.  | 200 00 |  |
| Escoumains.....       | C. J. Bélanger, jr..... | Oct. 27, 1906. |       | 200 00 |  |

## SESSIONAL PAPER No. 21

TABLE showing the names of ports proclaimed under certain Dominion Acts—*Con.*PROVINCE OF QUEBEC—*Continued.*

| Names of Ports.       | Harbour Masters.       | Date of appointment. | Amount collected. | Remuneration allowed. | Amount paid to Cr. R. G. |
|-----------------------|------------------------|----------------------|-------------------|-----------------------|--------------------------|
|                       |                        |                      | \$ cts.           | \$ cts.               | \$ cts.                  |
| Grand Entry .....     | André Cyr .....        | July 10, 1907.       | 3 50              | 200 00                |                          |
| Grand River .....     | G. Beaudin .....       | April 8, 1900.       | 6 00              | 100 00                |                          |
| Gaspé .....           | F. G. Eden .....       | April 3, 1889.       | Nil.              | 500 00                |                          |
| House Harbour .....   | C. Lafrance .....      | Dec. 10, 1896.       | 32 00             | 200 00                |                          |
| Maria .....           | Arthur Cyr .....       | Mar. 29, 1905.       | Nil.              | 100 00                |                          |
| Matane .....          | L. J. Lavasseur .....  | Dec. 12, 1896.       | 76 00             | 200 00                |                          |
| Malbaie .....         | Patric Lawrence .....  |                      | 15 00             | 200 00                |                          |
| Metis .....           | J. W. Ferguson .....   | May 10, 1906.        | Nil.              | 200 00                |                          |
| New Carlisle .....    | J. Chisholme .....     | April 22, 1902.      | 1 00              | 200 00                |                          |
| New Richmond .....    | F. X. Cormier .....    | April 15, 1902.      | 23 00             | 200 00                |                          |
| Nouvelle .....        | J. Cassey .....        | Jan. 3, 1903.        | 2 50              | 200 00                |                          |
| Oak Bay .....         | T. Harper .....        | July 12, 1904.       | 30 00             | 200 00                |                          |
| Paspebiac .....       | W. L. Kempffer .....   | Sept. 21, 1900.      | 29 50             | 150 00                |                          |
| Percé .....           | E. Donahue .....       | Oct. 10, 1903.       | 7 50              | 100 00                |                          |
| Port Daniel .....     | B. Langlois .....      | Feb. 26, 1907.       | 13 50             | 200 00                |                          |
| Rimouski .....        | A. P. S. Laurent ..... | May 31, 1896.        | 106 50            | 200 00                |                          |
| Rivière du Loup ..... | F. E. Gilbert .....    | Oct. 5, 1902.        | 30 00             | 100 00                |                          |
| St. Godfrey .....     | J. Grenier .....       | June 5, 1905.        | 5 00              | 100 00                |                          |
| Montmagny .....       | L. Dionne .....        | Oct. 22, 1896.       | 37 50             | 200 00                |                          |
| St. Johns .....       | G. H. Farrer .....     | Mar. 20, 1897.       | Nil.              | 600 00                |                          |
| Sorel .....           | J. A. Proulx .....     | June 6, 1901.        | 500 00            | 400 00                | 100 00                   |
| Sault au Mouton ..... | C. E. Nolet .....      | April 11, 1907.      |                   | 200 00                |                          |
| Trois Pistoies .....  | E. T. Pettigrew .....  | April 11, 1899.      | Nil.              | 100 00                |                          |
| Tadousac .....        | A. Gingras .....       | June 6, 1906.        | Nil.              | 200 00                |                          |
| Grand Manan .....     | A. H. Cheney .....     |                      | 6 00              |                       |                          |

## PROVINCE OF NEW BRUNSWICK.

|                                |                         |                 |        |        |  |
|--------------------------------|-------------------------|-----------------|--------|--------|--|
| Alma .....                     | G. W. Parson .....      | Mar. 2, 1898.   | 38 00  | 100 00 |  |
| Back Bay .....                 | Harry W. Harrer .....   |                 | 3 50   |        |  |
| Bathurst .....                 | Capt. M. Daly .....     | Apr. 15, 1907.  | 47 50  | 200 00 |  |
| Black's & Beaver Harbour ..... | E. W. Cross .....       | Sept. 17, 1883. | 16 50  | 100 00 |  |
| Buctouche .....                | H. Hutcheson .....      | Apr. 17, 1897.  | 8 00   | 100 00 |  |
| Campbellton .....              | G. E. Asker .....       |                 | 92 00  | 200 00 |  |
| Campobello .....               | G. W. Lank .....        | May 12, 1910.   | 5 00   | 100 00 |  |
| Cape Tormentine .....          | M. S. Treene .....      | May 13, 1901.   | 16 00  | 200 00 |  |
| Carabet .....                  | G. A. A'bert .....      | Nov. 7, 1905.   | 6 00   | 150 00 |  |
| Chatham .....                  | A. J. Walls .....       | July 13, 1898.  | 204 00 | 300 00 |  |
| Cocagne .....                  | J. T. Bourque .....     | June 22, 1905.  | Nil.   | 100 00 |  |
| Dalhousie .....                | W. S. Smith .....       | Mar. 19, 1888.  | 133 00 | 200 00 |  |
| Dorchester .....               | Jas. Shea .....         | Oct. 25, 1900.  | 72 00  | 200 00 |  |
| Fairhaven .....                | A. Calder .....         | July 30, 1901.  | 7 00   | 200 00 |  |
| Grand Harbour .....            | T. Ingalls .....        | Apr. 19, 1907.  | 6 50   | 100 00 |  |
| Gull Rock Channel .....        | G. A. Johnson .....     | Apr. 27, 1904.  | Nil.   | 100 00 |  |
| Harvey .....                   | Wm. Wood .....          | June 9, 1903.   | 41 00  | 100 00 |  |
| Heron Channel .....            | D. Robertson .....      | July 5, 1897.   | 25 00  | 200 00 |  |
| Hillsborough .....             | J. O'Shaughnessy .....  | Apr. 13, 1898.  | 34 91  | 150 00 |  |
| Hopewell Cape .....            | J. H. Christopher ..... | Apr. 13, 1898.  | 8 50   | 200 00 |  |
| Ledge of St. Stephen's .....   | Wm. McBean .....        | June 12, 1894.  | Nil.   | 100 00 |  |
| Letete .....                   | H. W. Harris .....      | Feb. 16, 1906.  | Nil.   | 100 00 |  |
| Little Shippegan .....         | J. Beaudin .....        | Oct. 27, 1906.  | Nil.   | 100 00 |  |
| Moncton .....                  | B. Toombs .....         | Apr. 12, 1905.  | 17 00  | 200 00 |  |
| Musquash .....                 | G. McNulty .....        | Sept. 28, 1896. | Nil.   | 100 00 |  |
| Newcastle .....                | J. Russell .....        | June 27, 1904.  | Nil.   | 300 00 |  |
| North Head .....               | G. E. Gaskill .....     | Mar. 20, 1907.  | 9 50   | 100 00 |  |
| Port Elgin & Baie Verte .....  | C. Trenholme .....      | Apr. 30, 1907.  | 3 50   | 200 00 |  |
| Pokemouche .....               | M. Landry .....         |                 | Nil.   | 100 00 |  |
| Richibucto .....               | Jas. A. Jardine .....   | May 11, 1874.   | 28 00  | 200 00 |  |
| Sackville .....                | E. Chase .....          | May 11, 1904.   | 7 50   | 200 00 |  |
| Seal Cove .....                | J. W. Wooster .....     | Apr. 19, 1907.  | 10 00  | 100 00 |  |
| St. Andrews .....              | Capt. R. Keay .....     | Feb. 16, 1909.  | 29 00  | 100 00 |  |
| St. George .....               | G. W. McKenzie .....    | May 10, 1900.   | 33 50  | 100 00 |  |
| St. Stephen .....              | Capt. A. McWhea .....   |                 | 33 00  |        |  |



TABLE showing the names of ports proclaimed under certain Dominion Acts—*Con.*PROVINCE OF NEW BRUNSWICK—*Continued.*

| Names of Ports.             | Harbour Masters.         | Date of appointment. | Amount collected. | Remuneration allowed. | Amount paid to Cr. R. G. |
|-----------------------------|--------------------------|----------------------|-------------------|-----------------------|--------------------------|
|                             |                          |                      | \$ cts.           | \$ cts.               | \$ cts.                  |
| St. Martin & Quaco. . . . . | J. R. McDonough. . . . . | July 16, 1902.       | 61 50             | 100 00                |                          |
| Shediac. . . . .            | Capt. J. Newman. . . . . | Dec. 31, 1909.       | 39 00             | 300 00                |                          |
| Shippegan. . . . .          | J. Degrace. . . . .      | Apr. 14, 1903.       | 13 50             | 100 00                |                          |
| Tracadie. . . . .           | T. Savoy. . . . .        | Sept. 23, 1899.      | 9 00              | 100 00                |                          |
| Waterside. . . . .          | H. T. Copp. . . . .      | Feb. 22, 1911.       | Nil.              | 100 00                |                          |
| West Isles. . . . .         | B. Simpson. . . . .      | May 27, 1901.        | Nil.              | 200 00                |                          |
| Whitehead. . . . .          | A. Cheney. . . . .       | Apr. 19, 1907.       | Nil.              | 100 00                |                          |

## PROVINCE OF NOVA SCOTIA.

| Names of Ports.                            | Harbour Masters.          | Date of appointment. | Amount collected. | Remuneration allowed. | Amount paid to Cr. R. G. |
|--|---------------------------|----------------------|-------------------|-----------------------|--------------------------|
|  |                           |                      | \$ cts.           | \$ cts.               | \$ cts.                  |
| Abbott's Harbour. . . . .                  | F. D'Entremont. . . . .   | May, 23, 1901        | 2 00              | 200 00                |                          |
| Advocate Harbour. . . . .                  | H. D. Barnes. . . . .     | Feb. 22, 1911        | Nil.              | 100 00                |                          |
| Amherst. . . . .                           | F. A. Gates. . . . .      | April 3, 1907        | 6 00              | 300 00                |                          |
| Annapolis. . . . .                         | J. Lindgren. . . . .      | July 7, 1898         | 52 00             | 200 00                |                          |
| Apple River. . . . .                       | B. Atkinson. . . . .      | Feb. 1, 1909         | 30 50             | 200 00                |                          |
| Arichat. . . . .                           | J. Langlois. . . . .      | May 22, 1909         | 19 00             | 200 00                |                          |
| Baddeck. . . . .                           | P. L. McFarlane. . . . .  | Mar. 6, 1909         | Nil.              | 200 00                |                          |
| Barrington. . . . .                        | B. Kenny. . . . .         | July 6, 1893         | 25 00             | 200 00                |                          |
| Bayfield. . . . .                          | D. Sutton. . . . .        | May 22, 1910         | Nil.              | 200 00                |                          |
| Bay St. Lawrence. . . . .                  | J. W. Fitzgerald. . . . . | Dec. 22, 1910        | Nil.              | 200 00                |                          |
| Bear River. . . . .                        | Wm. McFadden. . . . .     | Sept. 27, 1897       | 20 00             | 100 00                |                          |
| Beaver Harbour. . . . .                    | H. Hawbott. . . . .       | Sept. 22, 1888       | 2 00              | 100 00                |                          |
| Big Harbour. . . . .                       | D. J. McKenzie. . . . .   | April 18, 1908       | Nil.              | 100 00                |                          |
| Bridgewater. . . . .                       | W. Oakes. . . . .         | Jan. 28, 1896        | 152 00            | 100 00                | 52 00                    |
| Big Bras d'Or. . . . .                     | John A. Bain. . . . .     | Feb. 7, 1910         | Nil.              | 200 00                |                          |
| Cape Canso. . . . .                        | Geo. Oliver. . . . .      | Feb. 14, 1905        | 84 00             | 150 00                |                          |
| Big P. nd. . . . .                         | Michael McIsaac. . . . .  | Mar. 8, 1906         |                   | 200 00                |                          |
| Cape Negro. . . . .                        | A. D. Perry. . . . .      |                      | 9 50              | 200 00                |                          |
| Chester. . . . .                           | R. C. Corkum. . . . .     | July 8, 1896         | 18 50             | 100 00                |                          |
| Cheticamp. . . . .                         | F. Aucoin. . . . .        | April 15, 1876       | 9 50              | 100 00                |                          |
| Clarke's Harbour. . . . .                  | J. G. Nickerson. . . . .  |                      | 66 03             | 200 00                |                          |
| Clementsport. . . . .                      | J. McCain. . . . .        | Oct. 18, 1898        | 7 50              | 150 00                |                          |
| Crow Harbour. . . . .                      |                           |                      |                   |                       |                          |
| D'Escousse. . . . .                        | M. Martell. . . . .       | April 22, 1902       | 8 50              | 100 00                |                          |
| Digby. . . . .                             | H. Anderson. . . . .      | June 19, 1902        | 47 00             | 200 00                |                          |
| East Bay. . . . .                          | Donald McInnis. . . . .   | April 5, 1886        |                   | 100 00                |                          |
| Fourchie. . . . .                          | Enos Cann. . . . .        | May 25, 1910         |                   | 100 00                |                          |
| Freeport. . . . .                          | L. Ring. . . . .          | Mar. 20, 1909        | 11 50             |                       |                          |
| Gabarouse. . . . .                         | Capt. G. Harris. . . . .  | Feb. 22, 1911        | 3 50              | 100 00                |                          |
| Glasgow and Cape Breton Pier. . . . .      | A. McQuarrie. . . . .     | Oct. 30, 1880        | 26 00             | 300 00                | 16 50                    |
| Guysboro. . . . .                          | A. M. Peart. . . . .      | Feb. 11, 1902        | 3 00              | 100 00                |                          |
| Halifax. . . . .                           | F. G. Rudolf. . . . .     | May 13, 1910         | 492 00            | 1,800 00              |                          |
| Hantsport. . . . .                         | Wm. McCulloch. . . . .    | Jan. 17, 1892        | Nil.              | 300 00                |                          |
| Ingonish N. Bay. . . . .                   | A. McLean. . . . .        | April 21, 1910       | 5 00              | 200 00                |                          |
| Ingonish S. Bay. . . . .                   | J. Doucette. . . . .      | April 30, 1901       | 2 50              | 100 00                |                          |
| Ingram River. . . . .                      | E. Huntly. . . . .        | Jan. 19, 1907        | 28 50             | 100 00                |                          |
| Internat'l Pier, Sydney. . . . .           | M. J. Neville. . . . .    | Oct. 30, 1880        | 316 50            | 300 00                | 16 50                    |
| Isaac's Harbour. . . . .                   | F. D. Cook. . . . .       | June 19, 1900        | 21 50             | 100 00                |                          |
| Jeddore. . . . .                           | E. Baker. . . . .         | Dec. 3, 1903         | 16 50             | 100 00                |                          |
| Jordan Bay. . . . .                        | F. Thorburn. . . . .      | May 11, 1901         | 7 00              | 150 00                |                          |
| Kelly Cove. . . . .                        | J. Kenny. . . . .         | April 6, 1908        | Nil.              | 100 00                |                          |
| La Have. . . . .                           | G. H. Zwicker. . . . .    | Feb. 25, 1875        | 40 00             | 300 00                |                          |
| L'Ardoise, Upper and Lower. . . . .        | G. Burke. . . . .         | Aug. 29, 1884        | 4 50              | 100 00                |                          |
| Lingan. . . . .                            | Vacant. . . . .           |                      |                   |                       |                          |
| Liscomb. . . . .                           | L. Wilson. . . . .        | Feb. 20, 1900        | 14 00             | 200 00                |                          |
| Gillies Pt. East Little Bras d'Or. . . . . | D. J. Campbell. . . . .   | April 17, 1899       | Nil.              | 100 00                |                          |
| Little Bras d'Or Lake. . . . .             | V. McLean. . . . .        | Sept. 23, 1907       | Nil.              | 100 00                |                          |
| Little Bras d'Or Harbour. . . . .          | J. M. LeBlanc. . . . .    | Oct. 9, 1909         | 2 00              | 200 00                |                          |
| Little Glace Bay. . . . .                  | E. F. Rigby. . . . .      | May 8, 1884          | 16 00             | 200 00                |                          |
| Little Narrows. . . . .                    | K. McLellan. . . . .      | Nov. 1, 1897         | Nil.              | 100 00                |                          |
| Liverpool. . . . .                         | Capt. J. Ryan. . . . .    | Dec. 22, 1906        | Nil.              | 200 00                |                          |

## SESSIONAL PAPER No. 21

TABLE showing the names of ports proclaimed under certain Dominion Acts—*Con.*PROVINCE OF NOVA SCOTIA—*Continued.*

| Names of Ports.               | Harbour Masters.           | Date of appointment. | Amount collected. | Remuneration allowed. | Amount paid to Cr. R. G. |
|-------------------------------|----------------------------|----------------------|-------------------|-----------------------|--------------------------|
|                               |                            |                      | \$ cts.           | \$ cts.               | \$ cts.                  |
| Lockeport.....                | G. J. Locke.....           | April 2, 1906        | Nil               | 100 00                |                          |
| Louisburg.....                | J. Townsends.....          | May 1, 1899          | 299 50            | 150 00                |                          |
| Lunenburg.....                | J. Heckman.....            | Oct. 1, 1909         | 173 50            | 150 00                | 23 50                    |
| Mabou.....                    | J. McInnes.....            | July 11, 1900        | 50                | 100 00                |                          |
| Mahone Bay.....               | A. Hyson.....              | Feb. 18, 1908        | 31 00             | 200 00                |                          |
| McNair's Cove.....            | R. McEachern.....          | Mar. 8, 1875         | Nil.              | 150 00                |                          |
| McKinnon's Harbour.....       | D. T. McNeil.....          | Oct. 9, 1909         | 5 00              | 200 00                |                          |
| Marble Mountain.....          | D. McDonald.....           | July 26, 1892        | 10 00             | 200 00                |                          |
| Margaretsville.....           | Capt. J. McGranaghan.....  | May 29, 1906         | 1 00              | 100 00                |                          |
| St. Margaret's Bay.....       | H. C. Garrison.....        | Dec. 14, 1901        | 7 00              | 100 00                |                          |
| Margaree.....                 | Fred. P. Chiasson.....     | Mar. 6, 1909         | 1 00              | 100 00                |                          |
| Marie Joseph.....             | Chas. Dixon.....           | Feb. 2, 1907         | 150 00            | 100 00                |                          |
| Merigomish.....               | T. B. Olding.....          | Mar. 11, 1910        | Nil.              | 200 00                |                          |
| Meteghan Harbour.....         | Capt. J. McLair.....       | Nov. 17, 1906        | 14 50             | 100 00                |                          |
| Meteghan River.....           | Luke A. Comeau.....        | June 1, 1897         |                   | 100 00                |                          |
| Musquodoboit.....             | Thos. Williams.....        | May 31, 1905         | 4 00              | 100 00                |                          |
| New Haven.....                | Hector A. McLeod.....      | Aug. 17, 1889        |                   | 100 00                |                          |
| Neil's Harbour.....           | R. Payne.....              | July 15, 1905        | 3 00              | 100 00                |                          |
| Noel.....                     | S. O'Brien.....            | Oct. 26, 1905        | 11 50             | 200 00                |                          |
| Northport.....                | J. Davis.....              | Dec. 21, 1902        | 13 00             | 100 00                |                          |
| North West Cove.....          | P. Bouthier.....           | June 30, 1902        | Nil.              | 200 00                |                          |
| Parrsboro.....                | R. T. Smith.....           | Apr. 30, 1892        | 95 50             | 300 00                |                          |
| Petit de Grat.....            | S. Boudrot.....            | June 5, 1895         | 8 50              | 200 00                |                          |
| Pictou Harbour.....           | Harbour Commissioners..... |                      |                   | 300 00                |                          |
| Petite Rivière Bridge.....    | J. N. Parks.....           | Apr. 27, 1888        | 1 00              | 100 00                |                          |
| Port George.....              | Vacant.....                |                      |                   |                       |                          |
| Port Greville.....            | D. Graham.....             | Apr. 27, 1909        | 27 50             | 200 00                |                          |
| Port Hawkesbury.....          | J. Lamey.....              | June 2, 1909         | 103 50            | 200 00                |                          |
| Port Hastings.....            | G. L. McLean.....          | Feb. 15, 1908        | 101 00            | 200 00                |                          |
| Port Hood.....                | J. H. Murphy.....          | July 9, 1875         | 3 50              | 200 00                |                          |
| Port Latour.....              | Wm. Shields.....           | Feb. 18, 1898        | 19 00             | 200 00                |                          |
| Port Lorne.....               | F. Beardsley.....          | June 9, 1907         | 1 00              | 200 00                |                          |
| Port Maitland.....            | J. Ellis.....              | Dec. 10, 1896        | 6 00              | 200 00                |                          |
| Port Morien.....              | H. McDonald.....           | Mar. 3, 1879         | 12 50             | 400 00                |                          |
| Port Mulgrave.....            | J. A. McDonald.....        | June 29, 1908        | 8 50              | 200 00                |                          |
| Port Medway.....              | J. Hopkins.....            | Feb. 13, 1903        | 13 00             | 200 00                |                          |
| Port Wade.....                | Capt. J. McWhinnie.....    | Oct. 14, 1907        | 56 00             | 200 00                |                          |
| Pubnico.....                  | D. Q. Amereau.....         | Sept. 27, 1882       | 41 50             | 100 00                |                          |
| Pugwash.....                  | G. M. Allen.....           | May 15, 1907         | 35 50             | 100 00                |                          |
| River Port.....               | F. J. C. Creaser.....      | Jan. 8, 1901         | 40 00             | 100 00                |                          |
| River Bourgeois.....          | E. E. Bouchie.....         | Apr. 9, 1886         | 4 00              | 100 00                |                          |
| River Hebert.....             | W. T. Theal.....           | July 24, 1905        | 117 00            | 100 00                |                          |
| River John.....               | H. Campbell.....           | June 1, 1891         | Nil.              | 100 00                |                          |
| St. Ann's Bay.....            | G. E. Fader.....           | Sept. 21, 1906       | 19 00             | 200 00                |                          |
| St. Mary's River.....         | Robert Quinn.....          | June 21, 1909        | 14 00             | 200 00                |                          |
| St. Peter's Harbour.....      | P. McNeil.....             | Sept 17, 1883        | 91 00             | 200 00                |                          |
| St. Ann's Harbour.....        | A. McLeod.....             | Apr. 16, 1909        | 15 00             | 200 00                |                          |
| Sambro.....                   | B. Smith.....              | May 27, 1890         | 13 50             | 200 00                |                          |
| Sheet Harbour.....            | H. Hall.....               | Apr. 11, 1898        | Nil.              | 200 00                |                          |
| Shelburne.....                | J. C. Morrison.....        | May 4, 1897          | 136 50            | 200 00                |                          |
| Ship Harbour.....             | H. Siteman.....            | Feb. 22, 1911        | 2 50              | 100 00                |                          |
| Spencer's Island.....         | B. McLellan.....           | May 22, 1899         | 6 00              | 100 00                |                          |
| Tangier.....                  | C. A. Hitchey.....         | Nov. 14, 1931        | 4 50              | 200 00                |                          |
| Tenny Cape.....               | D. Longard.....            | Oct. 26, 1905        | Nil.              | 200 00                |                          |
| Tatamagouche.....             | Wm. Reilly.....            | June 1, 1900         | 1 50              | 200 00                |                          |
| Tidnish.....                  | R. B. Davidson.....        | Feb. 19, 1910        | 2 00              | 100 00                |                          |
| Tiverton.....                 | J. Blackford.....          | Apr. 3, 1900         | 4 00              | 100 00                |                          |
| Torbay.....                   | I. Forgere.....            | Aug. 25, 1903        | 12 00             | 200 00                |                          |
| Tusket.....                   | Cyrille Doucette.....      | Nov. 21, 1902        | 9 00              | 100 00                |                          |
| Tusket Wedge.....             | Capt. H. A. LeBlanc.....   | Mar. 3, 1911         | 34 50             | 100 00                |                          |
| Victoria Pier, South Bar..... | Ernest Richardson.....     | Nov. 1, 1897         |                   | 200 00                |                          |
| Wallace.....                  | J. D. Patton.....          | Feb. 14, 1896        | 1 00              | 100 00                |                          |
| West Arichat.....             | Capt. L. Forest.....       | May 25, 1910         | Nil.              | 100 00                |                          |
| Walton.....                   | B. McCulloch.....          | Oct. 25, 1905        | 37 50             | 200 00                |                          |
| West Bay.....                 | D. Forbes.....             | Dec. 22, 1910        | Nil.              | 100 00                |                          |
| West Port.....                | G. Welch.....              | Jan. 29, 1898        | 21 50             | 200 00                |                          |
| Weymouth.....                 | S. McCormack.....          |                      | 66 00             |                       |                          |

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TABLE showing the names of ports proclaimed under certain Dominion Acts—*Con.*PROVINCE OF NOVA SCOTIA—*Concluded.*

| Names of Ports.     | Harbour Masters.        | Date of appointment. | Amount collected. | Remuneration allowed. | Amount paid to Cr. R. G. |
|---------------------|-------------------------|----------------------|-------------------|-----------------------|--------------------------|
|                     |                         |                      | \$ cts.           | \$ cts.               | \$ cts.                  |
| Whitehead .....     | L. Munroe.....          | Feb. 8, 1909         | 33 00             | 200 00                |                          |
| Whycocomagh.....    | N. Matheson .....       | July 6, 1909         |                   | 100 00                |                          |
| Wolfville.....      | J. L. Franklin.....     |                      | 6 50              | 100 00                |                          |
| Wood's Harbour..... | J. Orechia.....         | Feb. 19, 1892        | 22 50             | 200 00                |                          |
| Yarmouth.....       | Capt. G. L. Wetmore.... | Jan. 24, 1911        | 203 00            | 250 00                |                          |
| Windsor.....        | Wm. McCulloch.....      |                      | 193 50            | 300 00                |                          |
| Washabuck.....      | V. McLean .....         |                      |                   |                       |                          |

## PROVINCE OF PRINCE EDWARD ISLAND.

|   |                     |               |        |        |  |
|---|---------------------|---------------|--------|--------|--|
| Alberton .....                            | J. Kinch.....       | July 30, 1901 | 3 00   | 200 00 |  |
| Bay Fortune.....                          | J. A. Coffin.....   | Apr. 29, 1875 | Nil.   | 200 00 |  |
| Brudenell.....                            | J. A. Gordon.....   | Oct. 26, 1905 | Nil.   | 200 00 |  |
| Cardigan River.....                       | F. Gallant.....     | Apr. 27, 1908 | 3 00   | 100 00 |  |
| Cove Head .....                           | M. Kielly.....      | Apr. 23, 1904 | Nil.   | 100 00 |  |
| Charlottetown and Hills-boro Harbour..... | J. White.....       | May 6, 1909   | 114 00 | 400 00 |  |
| Crapaud.....                              | W. Myers.....       | June 17, 1874 | 4 00   | 200 00 |  |
| Egmont Bay.....                           | G. Henry.....       | Dec. 5, 1906  | 30     | 200 00 |  |
| Georgetown.....                           | J. Westaway.....    |               | 19 50  | 200 00 |  |
| Malpeque.....                             | J. Champion.....    | Dec. 10, 1896 | 1 00   | 200 00 |  |
| Miminegash.....                           | P. Doucette.....    | Jan. 21, 1908 | 3 00   | 100 00 |  |
| Montague Bridge.....                      | H. McPherson.....   | May 5, 1904   | 5 00   | 200 00 |  |
| Murray Harbour.....                       | G. McLeod.....      | Jan. 19, 1907 | 1 50   | 200 00 |  |
| Murray River.....                         | G. McLeod.....      | Feb. 9, 1897  | 1 50   | 200 00 |  |
| New London.....                           | H. McLeod.....      | July 6, 1910  | 3 00   | 200 00 |  |
| Pinette.....                              | J. D. McDonald..... | Oct. 22, 1903 | 2 50   | 100 00 |  |
| Port Hill.....                            | W. C. Brown.....    | June 20, 1898 | Nil.   | 200 00 |  |
| Pownal.....                               | M. Haley.....       | Mar. 30, 1897 |        | 100 00 |  |
| St. Peter's Bay.....                      | G. Barry.....       | May 3, 1901   | Nil.   | 200 00 |  |
| Souris E. & W.....                        | J. Tiernay.....     | May 15, 1905  | 28 50  | 200 00 |  |
| Summerside.....                           | J. Matheson.....    | Feb. 8, 1907  | 33 00  | 200 00 |  |
| Tracadie (Grand).....                     | J. McAulley.....    | Apr. 18, 1910 | Nil.   | 200 00 |  |
| Vernon River Bridge.....                  | J. Finlay.....      | Oct. 9, 1884  | 2 00   | 200 00 |  |
| Wood Islands.....                         | J. Young.....       | May 22, 1899  | Nil.   | 100 00 |  |

## PROVINCE OF BRITISH COLUMBIA.

|                                |                           |               |        |        |        |
|--------------------------------|---------------------------|---------------|--------|--------|--------|
| Chemainus.....                 | L. G. Hill.....           |               | 58 50  | 200 00 |        |
| Comox.....                     | G. H. Rowe.....           |               | 330 50 | 200 00 | 130 50 |
| Ladysmith.....                 | W. Fraser.....            | May 29, 1906  | 170 50 | 200 00 |        |
| Nanaimo and Departure Bay..... | J. Knartson.....          | Oct. 26, 1905 | 595 00 | 500 00 | 95 00  |
| New Westminster.....           | W. B. Shiles.....         | Feb. 15, 1908 | 163 50 | 400 00 |        |
| Snug Harbour.....              | G. C. Tunstall, jr. ....  | Apr. 18, 1910 | 3 00   | 200 00 |        |
| Vancouver.....                 | Capt. D. A. McInnes ..... | June 22, 1909 | 705 50 | 600 00 | 105 50 |
| Victoria & Esquimalt.....      | C. E. Clarke.....         | Nov. 3, 1894  | 645 00 | 600 00 | 45 00  |
| Prince Rupert.....             | T. H. Alicock.....        |               | 21 00  |        |        |



SESSIONAL PAPER No. 21

## RECAPITULATION.

| Province.                  | Number<br>of<br>Ports. | Amount<br>collected. | Amount<br>paid to<br>Cr. Rc. G'l. |
|----------------------------|------------------------|----------------------|-----------------------------------|
|                            |                        | \$ cts.              | \$ cts.                           |
| Ontario .....              | 22                     | 1,111 50             |                                   |
| Quebec .....               | 34                     | 962 50               | 100 00                            |
| New Brunswick .....        | 42                     | 1,058 41             |                                   |
| Nova Scotia .....          | 125                    | 3,689 00             | 92 00                             |
| Prince Edward Island ..... | 24                     | 224 80               |                                   |
| British Columbia .....     | 9                      | 2,692 50             | 376 00                            |
| Totals .....               | 256                    | 9,738 71             | 568 00                            |

2 GEORGE V., A. 1912

UNITED STATES fishing vessels to which licenses were issued under the Act entitled 'An Act respecting Fishing Vessels of the United States of America,' during the fiscal year ended March 31, 1911.

| Name of Vessel.          | Port of Registry.      | Tonnage. | Port of Issue.       | Amount. |      |
|--------------------------|------------------------|----------|----------------------|---------|------|
|                          |                        |          |                      | \$      | cts. |
| Harry A. Nickerson. .... | Gloucester, Mass. .... | 83       | Lockeport. ....      | 124     | 50   |
| Olga. ....               | " .....                | 77       | Shelburne .....      | 115     | 50   |
| Hector G. Wells. ....    | " .....                | 66       | " .....              | 99      | 00   |
| Lottie E. Merchant. .... | " .....                | 79       | Liverpool .....      | 118     | 50   |
| Gladiator. ....          | " .....                | 75       | Shelburne .....      | 112     | 50   |
| Ella N. Goodwin. ....    | " .....                | 86       | Sand Point .....     | 129     | 00   |
| Avalon. ....             | " .....                | 97       | Liverpool .....      | 127     | 50   |
| W. E. Morrissey. ....    | " .....                | 93       | Shelburne .....      | 139     | 50   |
| S. P. Willard. ....      | " .....                | 87       | " .....              | 130     | 50   |
| Georgie Campbell. ....   | " .....                | 78       | " .....              | 117     | 00   |
| Madonna. ....            | " .....                | 79       | " .....              | 118     | 50   |
| Priscilla Smith. ....    | " .....                | 89       | " .....              | 135     | 50   |
| Nooma. ....              | " .....                | 77       | Pubnico .....        | 115     | 50   |
| Hattie A. Heckman. ....  | " .....                | 72       | " .....              | 108     | 00   |
| John R. Bradley. ....    | " .....                | 80       | Liverpool .....      | 120     | 00   |
| Lillian. ....            | Boston, Mass. ....     | 95       | " .....              | 142     | 50   |
| Electer. ....            | Gloucester. ....       | 84       | Lockeport. ....      | 126     | 00   |
| Mildred Robinson. ....   | Boston. ....           | 86       | Sand Point .....     | 129     | 00   |
| Preceptor. ....          | Gloucester. ....       | 89       | North Sydney. ....   | 133     | 50   |
| Flirt. ....              | " .....                | 82       | Shelburne .....      | 123     | 00   |
| Blanche. ....            | " .....                | 78       | " .....              | 117     | 00   |
| Nivanda. ....            | " .....                | 76       | Lockeport. ....      | 114     | 00   |
| Richards. ....           | " .....                | 90       | Sand Point .....     | 135     | 00   |
| Arethusa. ....           | " .....                | 107      | North Sydney. ....   | 160     | 50   |
| Thos. S. Porter. ....    | " .....                | 92       | Arichat. ....        | 138     | 00   |
| Jas. W. Parker. ....     | Boston. ....           | 96       | Canso. ....          | 144     | 00   |
| Lizzie M. Stanley. ....  | Gloucester. ....       | 92       | " .....              | 138     | 00   |
| Mystery. ....            | " .....                | 78       | " .....              | 117     | 00   |
| Esperanto. ....          | " .....                | 91       | " .....              | 136     | 50   |
| Ingomar. ....            | " .....                | 104      | Halifax. ....        | 156     | 00   |
| Onato. ....              | " .....                | 105      | Pt. Mulgrave. ....   | 157     | 50   |
| Senator. ....            | " .....                | 74       | Pt. Hawkesbury. .... | 111     | 00   |
| Conqueror. ....          | " .....                | 104      | Sand Point .....     | 156     | 00   |
| Graling. ....            | " .....                | 87       | " .....              | 130     | 50   |
| Raynah. ....             | Boston. ....           | 95       | Shelburne .....      | 142     | 50   |
| Ella M. Doughty. ....    | Portland. ....         | 51       | Lockeport. ....      | 76      | 50   |
| Mary F. Curtis. ....     | Gloucester. ....       | 85       | Sand Point .....     | 127     | 50   |
| Corona. ....             | " .....                | 82       | Canso. ....          | 123     | 00   |
| Ramona. ....             | " .....                | 58       | Liverpool .....      | 87      | 00   |
| Lizzie Maud. ....        | Boston. ....           | 48       | Yarmouth. ....       | 72      | 00   |
| Thomas A. Cromwell. .... | " .....                | 89       | Pubnico .....        | 133     | 50   |
| Margie Turner. ....      | Portland. ....         | 44       | " .....              | 66      | 00   |
| Etta Mildred. ....       | Gloucester. ....       | 45       | " .....              | 67      | 50   |
| Monitor. ....            | " .....                | 100      | Canso. ....          | 150     | 00   |
| J. W. Bradley. ....      | New Bedford. ....      | 45       | Sand Point .....     | 67      | 50   |
| Romance. ....            | Gloucester. ....       | 96       | Canso. ....          | 144     | 00   |
| Natalie J. Nelson. ....  | Boston. ....           | 78       | Pubnico. ....        | 117     | 00   |
| Cavalier. ....           | Gloucester. ....       | 96       | Canso. ....          | 144     | 00   |
| John Hays Hammond. ....  | " .....                | 92       | Pt. Mulgrave. ....   | 138     | 00   |
| Margaret. ....           | " .....                | 79       | Canso. ....          | 118     | 50   |
| Atlanta. ....            | " .....                | 74       | Pubnico. ....        | 111     | 00   |
| Elsie. ....              | Boston. ....           | 98       | Barrington. ....     | 147     | 00   |
| Kinco. ....              | Gloucester. ....       | 83       | Canso. ....          | 124     | 50   |
| Corsair. ....            | " .....                | 78       | Pubnico. ....        | 117     | 00   |
| Senator Saulsberry. .... | " .....                | 77       | Yarmouth. ....       | 115     | 50   |
| Titania. ....            | " .....                | 77       | Sand Point .....     | 115     | 50   |
| Howard. ....             | " .....                | 76       | Shelburne .....      | 114     | 00   |
| Manhassetts. ....        | Boston. ....           | 79       | Pubnico. ....        | 118     | 50   |
| S. R. Lawson. ....       | Gloucester. ....       | 85       | " .....              | 127     | 50   |
| Fannie A. Smith. ....    | Gloucester, Mass. .... | 87       | House Harbour. ....  | 139     | 50   |
| Colonel. ....            | " .....                | 79       | " .....              | 118     | 50   |
| Jubilee. ....            | " .....                | 61       | Barrington. ....     | 91      | 50   |
| Winnifred. ....          | " .....                | 69       | Pubnico. ....        | 90      | 00   |
| Vanessa. ....            | Boston. ....           | 84       | Liverpool. ....      | 126     | 90   |
| Mary A. Gleison. ....    | Gloucester. ....       | 65       | Pubnico. ....        | 97      | 50   |

## SESSIONAL PAPER No. 21

UNITED STATES fishing vessels to which licenses were issued, &c.—*Concluded.*

| Name of Vessel.         | Port of Registry.  | Tonnage. | Port of Issue.         | Amount. |
|-------------------------|--------------------|----------|------------------------|---------|
|                         |                    |          |                        | \$ cts. |
| Muriel.....             | Boston.....        | 83       | Tusket Wedge.....      | 124 50  |
| Independence II.....    | Gloucester.....    | 109      | ".....                 | 163 50  |
| Cythia.....             | ".....             | 102      | Liverpool.....         | 147 00  |
| Arabia.....             | ".....             | 86       | ".....                 | 129 00  |
| Arbutus.....            | ".....             | 86       | Pt. Hawkesbury.....    | 129 00  |
| Morning Star.....       | Boston.....        | 85       | Lockeport.....         | 127 50  |
| Paragon.....            | Gloucester.....    | 80       | Arichat.....           | 120 00  |
| Wm. H. Rider.....       | ".....             | 45       | Sand Point.....        | 67 50   |
| Townapowell.....        | Boston.....        | 76       | Yarmouth.....          | 114 00  |
| Hope.....               | ".....             | 54       | Sand Point.....        | 81 00   |
| Lena & Maud.....        | Gloucester.....    | 75       | ".....                 | 112 50  |
| T. M. Nicholson.....    | Bucksport, Me..... | 90       | Louisburg.....         | 135 00  |
| Governor Russell.....   | Provincetown.....  | 129      | Arichat.....           | 193 50  |
| Mildred V. Newnan.....  | Cape Porpoise..... | 43       | Liverpool.....         | 64 50   |
| Virginia.....           | Boston.....        | 73       | Shelburne.....         | 109 50  |
| Clintonia.....          | Gloucester.....    | 105      | Liverpool.....         | 157 50  |
| Arcadia.....            | ".....             | 90       | Sand Point.....        | 135 00  |
| Maggie.....             | ".....             | 38       | Souris.....            | 57 00   |
| Almeida.....            | ".....             | 67       | Lockeport.....         | 100 50  |
| Pythean.....            | ".....             | 45       | Lievrpool.....         | 67 50   |
| Judique.....            | ".....             | 89       | North Sydney.....      | 133 50  |
| Claudia.....            | ".....             | 79       | Sand Point.....        | 118 50  |
| Lucunia.....            | ".....             | 104      | North Sydney.....      | 156 00  |
| Catharine Burke.....    | ".....             | 92       | Sand Point.....        | 138 00  |
| Movanam.....            | Duxbury.....       | 82       | North Sydney.....      | 123 00  |
| Effie M. Prior.....     | Gloucester.....    | 97       | Pt. Hawkesbury.....    | 145 50  |
| Hattie L. Trask.....    | Pubnico.....       | 48       | Pubnico.....           | 72 00   |
| Oliver F. Kilham.....   | Beverly.....       | 43       | Yarmouth.....          | 64 50   |
| Elmer E. Grey.....      | Boston.....        | 84       | North Sydney.....      | 126 00  |
| Slade Gorton.....       | Gloucester.....    | 88       | Sydney.....            | 132 00  |
| W. Matheson.....        | Budspport.....     | 171      | Louisburg.....         | 108 00  |
| Selma.....              | Boston.....        | 87       | Shelburne, (N.E.)..... | 130 50  |
| Grace Darling.....      | Beverly.....       | 47       | Yarmouth.....          | 70 50   |
| Geo. Parker.....        | Gloucester.....    | 100      | Canso.....             | 150 00  |
| Teagar.....             | ".....             | 61       | Shelburne.....         | 91 50   |
| Oliver F. Kilham.....   | Beverly.....       | 43       | Yarmouth.....          | 64 50   |
| Grace Darling.....      | ".....             | 47       | ".....                 | 70 50   |
| Smuggler.....           | Gloucester.....    | 91       | ".....                 | 136 50  |
| Independence II.....    | ".....             | 109      | Canso.....             | 163 50  |
| Roosevelt.....          | ".....             | 90       | North Sydney.....      | 135 00  |
| Mystery.....            | ".....             | 78       | Yarmouth.....          | 117 00  |
| Paragon.....            | ".....             | 80       | Halifax.....           | 120 00  |
| Arkona.....             | ".....             | 97       | Liverpool.....         | 145 50  |
| Selma.....              | Boston.....        | 88       | Halifax.....           | 132 00  |
| Alice R. Lawson.....    | Gloucester.....    | 85       | Yarmouth.....          | 127 50  |
| Lucinda T. Rowell.....  | ".....             | 77       | ".....                 | 115 50  |
| Arcadia.....            | ".....             | 90       | ".....                 | 135 00  |
| Blanche.....            | ".....             | 78       | Shelburne.....         | 117 50  |
| Premier.....            | ".....             | 97       | Yarmouth.....          | 145 50  |
| J. J. Flaherty.....     | ".....             | 124      | ".....                 | 186 00  |
| Massachusetts.....      | ".....             | 102      | ".....                 | 153 00  |
| Hazel R. Hines.....     | ".....             | 79       | ".....                 | 118 50  |
| Senator Gardner.....    | ".....             | 94       | ".....                 | 141 00  |
| Georgia Campbell.....   | ".....             | 78       | Shelburne.....         | 117 00  |
| Bohemia.....            | ".....             | 86       | Tusket.....            | 129 00  |
| Mabel D. Hines.....     | ".....             | 92       | ".....                 | 138 00  |
| A. M. Parker.....       | ".....             | 100      | ".....                 | 150 00  |
| Senator.....            | ".....             | 75       | Halifax.....           | 112 50  |
| Lottie G. Merchant..... | ".....             | 79       | Tusket.....            | 118 50  |



## APPENDIX

## STATEMENT of expenditure by the Marine Department

|  | 1868.      | 1869.      | 1870.     | 1871.      |
|--|------------|------------|-----------|------------|
|  | \$ cts.    | \$ cts.    | \$ cts.   | \$ cts.    |
| Maintenance of Lights—                         |            |            |           |            |
| Above Montreal.....                            | 40,561 28  | 42,306 69  | 46,289 05 | 44,054 01  |
| Montreal District.....                         | 23,053 56  | 25,762 54  | 21,669 49 | 22,453 52  |
| Below Quebec.....                              | 45,615 35  | 41,651 73  | 43,730 61 | 31,582 75  |
| Nova Scotia.....                               | 46,460 72  | 56,394 88  | 43,682 86 | 76,230 77  |
| New Brunswick.....                             | 20,488 00  | 23,893 00  | 27,485 14 | 20,542 29  |
| Prince Edward Island.....                      |            |            |           |            |
| British Columbia.....                          |            |            |           |            |
| Construction—                                  |            |            |           |            |
| Above Montreal.....                            | 3,136 15   |            | 2,976 83  | 8,770 55   |
| Quebec.....                                    | 7,323 75   | 7,492 59   | 1,543 06  |            |
| Nova Scotia.....                               | 22,041 42  | 6,905 80   | 18,967 23 | 10,948 21  |
| New Brunswick.....                             |            |            | 11,555 91 | 8,735 73   |
| Prince Edward Island.....                      |            |            |           |            |
| British Columbia.....                          |            |            |           |            |
| Dominion steamers—                             |            |            |           |            |
| Quebec.....                                    | 69,026 73  | 37,176 02  | 34,549 49 | 59,797 05  |
| Nova Scotia.....                               | 14,778 92  | 26,603 94  | 19,759 96 | 13,139 86  |
| New Brunswick.....                             |            |            |           |            |
| Prince Edward Island.....                      |            |            |           |            |
| British Columbia.....                          |            |            |           |            |
| Examination of masters and mates.....          |            |            | 908 12    | 1,407 66   |
| Hudson Bay expedition.....                     |            |            |           |            |
| Investigation into wrecks.....                 |            |            | 140 00    |            |
| Marine Hospital, Quebec.....                   | 19,977 36  | 19,221 45  | 21,618 73 | 19,823 18  |
| Marine Hospitals.....                          | 1,070 86   | 15,615 71  | 15,652 62 | 15,728 93  |
| Meteorological service.....                    | 8,200 00   | 8,950 00   | 8,950 00  | 9,370 82   |
| Registration of Canadian shipping.....         |            |            |           |            |
| Removal of obstructions.....                   |            |            | 2,350 07  | 1,000 00   |
| Rewards for saving life.....                   |            |            |           |            |
| Signal service.....                            |            |            |           |            |
| Steamboat inspection.....                      | 7,106 93   | 7,999 00   | 7,396 96  | 8,321 00   |
| Survey, Georgian Bay.....                      |            |            |           |            |
| Water police, Montreal.....                    | 27,445 35  | 10,238 71  | 9,323 31  | 8,030 00   |
| " Quebec.....                                  |            | 12,633 59  | 9,038 62  | 9,379 73   |
| Civil Government.....                          | 15,083 88  | 18,064 25  | 19,401 05 | 20,220 96  |
| Steam communication—                           |            |            |           |            |
| Between Quebec and Maritime Provinces.....     |            |            |           |            |
| Between Prince Edward Island and mainland..... |            |            |           |            |
| Purchase of steamers to replace—               |            |            |           |            |
| <i>Glendon</i> .....                           |            |            |           |            |
| <i>Lady Head</i> .....                         |            |            |           |            |
| Winter mail service, Prince Edward Island..... |            |            |           |            |
| Tidal observations.....                        |            |            |           |            |
| Gratuities.....                                |            |            |           |            |
| Survey, Burrard Inlet.....                     |            |            |           |            |
| Export cattle trade.....                       |            |            |           |            |
|  | 371,070 56 | 360,899 90 | 36,212 91 | 389,537 12 |

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from Confederation to March 31, 1910.

| 1872.      | 1873.      | 1874.      | 1875.      | 1876.      | 1877.      | 1878.      | 1879.      | 1880.      |
|------------|------------|------------|------------|------------|------------|------------|------------|------------|
| \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    |
| 57,609 16  | 61,036 47  | 60,798 75  | 71,937 18  | 68,344 18  | 65,421 00  | 73,175 11  | 74,587 78  | 65,518 61  |
| 22,369 00  | 31,143 14  | 20,939 13  | 15,000 00  | 12,999 48  | 15,998 00  | 15,996 00  | 14,917 95  | 16,523 88  |
| 41,936 00  | 65,645 00  | 102,056 09 | 110,362 00 | 93,792 93  | 89,980 41  | 96,904 00  | 93,178 61  | 96,703 87  |
| 67,806 24  | 100,953 80 | 114,711 91 | 114,344 51 | 143,125 56 | 128,496 00 | 132,888 95 | 120,951 33 | 116,189 60 |
| 23,369 12  | 29,266 85  | 53,439 04  | 60,119 02  | 62,551 61  | 50,998 00  | 58,989 00  | 57,499 02  | 61,252 82  |
| .....      | .....      | 3,357 71   | 12,584 64  | 13,730 53  | 11,817 00  | 16,986 66  | 12,158 72  | 15,288 17  |
| .....      | 13,207 09  | 18,519 50  | 15,983 72  | 17,175 97  | 15,853 00  | 18,948 78  | 15,152 73  | 15,576 99  |
| 6,940 45   | 18,999 38  | 24,461 86  | 14,286 65  | 13,320 40  | 16,267 98  | 7,207 96   | 11,993 75  | 13,297 81  |
| 57,818 35  | 39,303 87  | 41,950 82  | 19,325 00  | 24,336 47  | 12,945 29  | 12,776 47  | 4,154 58   | 7,797 75   |
| 34,760 12  | 90,181 79  | 51,867 94  | 43,898 63  | 42,214 55  | 25,550 00  | 13,500 00  | 17,386 97  | 7,069 01   |
| 9,561 14   | 16,691 06  | 31,572 60  | 8,842 97   | 17,819 85  | 7,083 82   | 12,028 13  | 22,598 14  | 4,985 53   |
| .....      | .....      | .....      | .....      | 11,829 61  | 17,752 00  | 2,504 47   | 2,560 88   | 6,074 50   |
| .....      | .....      | 4,353 93   | 8,799 07   | 8,477 67   | 29 66      | .....      | .....      | .....      |
| 47,500 00  | 51,758 05  | 64,490 00  | 79,043 70  | 62,971 49  | 49,987 66  | 42,683 00  | 44,972 79  | 49,318 93  |
| 20,999 63  | 24,999 57  | 30,008 99  | 22 992 62  | 133,826 08 | 38,739 39  | 43,027 00  | 42,016 53  | 49,438 93  |
| .....      | .....      | .....      | .....      | 16,241 26  | 61,782 63  | 28,933 63  | 16,332 05  | 14,429 52  |
| 12,115 96  | 15,984 72  | 10,555 67  | 41,796 74  | 10,156 56  | 16,095 90  | 12,193 40  | 7,460 68   | 9,733 34   |
| 4,312 07   | 6,466 18   | 4,520 19   | 5,696 62   | 4,672 08   | 4,050 00   | 4,249 76   | 4,250 12   | 4,253 43   |
| 874 00     | 1,068 89   | 2,313 31   | 366 00     | 466 41     | 342 65     | 500 00     | 1,691 00   | 676 73     |
| 21,000 00  | 21,000 00  | 20,456 45  | 21,994 75  | 23,795 85  | 19,965 97  | 19,987 50  | 20,791 77  | 12,991 23  |
| 53,536 16  | 27,159 43  | 45,986 87  | 37,111 67  | 37,155 72  | 42,449 55  | 37,487 10  | 37,445 57  | 35,040 00  |
| 12,618 15  | 18,830 54  | 36,700 59  | 33,580 00  | 45,560 03  | 44,871 38  | 46,050 24  | 45,706 13  | 45,554 51  |
| .....      | .....      | 272 30     | 1,096 46   | 412 06     | 842 14     | 1,435 10   | 239 26     | 257 75     |
| .....      | .....      | 450 00     | 450 00     | .....      | 203 00     | 462 00     | 305 86     | 825 00     |
| 2,284 32   | 1,975 13   | 4,931 78   | 3,552 86   | 2,292 20   | 1,958 55   | 4,071 00   | 2,533 10   | 2,263 15   |
| .....      | .....      | 1,000 00   | .....      | .....      | .....      | .....      | .....      | .....      |
| 8,500 00   | 13,266 00  | 10,291 68  | 12,200 00  | 13,081 86  | 13,073 01  | 13,228 38  | 13,076 46  | 11,854 34  |
| 10,000 00  | 14,453 87  | 12,370 86  | 13,395 00  | 14,090 00  | 13,524 29  | 14,062 00  | 13,462 74  | 13,131 08  |
| 10,348 00  | 18,200 00  | 26,526 66  | 24,500 00  | 27,136 68  | 21,482 08  | 23,498 06  | 23,023 26  | 22,094 48  |
| 22,644 52  | 25,336 04  | 30,087 23  | 31,323 16  | 32,789 18  | 32,304 12  | 32,682 05  | 36,610 19  | 35,033 95  |
| .....      | .....      | 15,000 00  | 10,000 00  | 10,000 00  | .....      | .....      | .....      | .....      |
| .....      | .....      | .....      | .....      | 766 00     | .....      | .....      | .....      | .....      |
| .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      |
| .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      |
| .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      |
| .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      |
| .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      | .....      |
| 518,958 49 | 706,817 92 | 845,150 90 | 844,586 09 | 970,146 27 | 820,054 38 | 786,156 23 | 755,359 47 | 723,390 89 |

2 GEORGE V., A. 1912

## STATEMENT of expenditure by the Marine Department

|   | 1881.      | 1882.      | 1883.      |
|---|------------|------------|------------|
|   | \$ cts.    | \$ cts.    | \$ cts.    |
| Maintenance of Lights—                              |            |            |            |
| Above Montreal.....                                 | 65,541 21  | 71,048 50  | 70,116 68  |
| Montreal district.....                              | 14,326 36  | 21,643 05  | 22,260 32  |
| Below Quebec.....                                   | 89,781 29  | 91,098 66  | 102,784 99 |
| Nova Scotia.....                                    | 128,918 59 | 137,846 15 | 150,793 17 |
| New Brunswick.....                                  | 63,921 90  | 66,073 00  | 75,946 92  |
| Prince Edward Island.....                           | 12,997 36  | 16,385 72  | 17,907 27  |
| British Columbia.....                               | 17,570 72  | 17,803 00  | 18,349 06  |
| Cape Race.....                                      |            |            |            |
| Construction—                                       |            |            |            |
| Above Montreal.....                                 | 14,180 02  | 13,581 00  | 9,782 27   |
| Quebec.....   | 7,539 76   | 3,731 31   | 9,672 55   |
| Nova Scotia.....                                    | 7,757 52   | 13,355 00  | 9,422 70   |
| New Brunswick.....                                  | 4,578 52   | 2,253 80   | 1,022 57   |
| Prince Edward Island.....                           | 8,150 06   | 3,092 00   | 1,934 49   |
| British Columbia.....                               | 8,655 39   | 3,237 90   | 1,005 26   |
| King's Printer.....                                 |            |            |            |
| Dominion Steamers—                                  |            |            |            |
| Quebec.....   | 64,973 00  | 44,923 98  | 45,156 13  |
| Nova Scotia.....                                    | 36,700 00  | 31,049 74  | 37,841 07  |
| New Brunswick.....                                  |            |            |            |
| Prince Edward Island.....                           | 15,139 95  | 23,911 97  | 19,680 00  |
| British Columbia.....                               | 11,788 09  | 8,504 61   | 25,484 00  |
| Department.....                                     |            |            |            |
| Examination of masters and mates.....               | 3,888 41   | 3,981 00   | 4,021 20   |
| Hudson's Bay Expedition.....                        |            |            |            |
| Investigation into wrecks.....                      | 310 43     | 863 19     | 873 64     |
| Marine hospital, Quebec.....                        | 19,964 33  | 19,938 12  | 19,990 53  |
| Marine hospitals.....                               | 32,218 94  | 33,162 45  | 29,888 78  |
| Meteorological service.....                         | 46,163 54  | 47,464 07  | 51,990 25  |
| Registration of Canadian shipping.....              | 607 43     | 2,013 28   | 168 84     |
| Removal of obstruction.....                         | 150 00     | 1,116 51   | 35 80      |
| Reward for saving life.....                         | 1,806 13   | 2,212 00   | 2,534 00   |
| Signal service.....                                 |            |            | 3,365 33   |
| Steamboat inspection.....                           | 12,211 65  | 14,835 00  | 16,209 00  |
| Hydrographic surveys.....                           |            |            | 77 81      |
| Water Police, Montreal.....                         | 21,953 26  | 21,994 74  | 15,798 24  |
| Water Police, Quebec.....                           | 13,497 81  | 20,221 82  | 22,520 41  |
| Civil Government.....                               | 36,447 50  | 36,789 46  | 37,988 39  |
| Steam communication—                                |            |            |            |
| Between Quebec and Maritime Provinces.....          |            |            |            |
| Between Prince Edward Island and mainland.....      |            |            |            |
| Repairs to wharfs.....                              |            |            |            |
| Purchase of steamers to replace—                    |            |            |            |
| <i>Stanley</i> .....                                |            |            | 399 55     |
| <i>Glendon</i> .....                                |            |            |            |
| <i>Lady Head</i> .....                              |            |            |            |
| Winter mail service, Prince Edward Island.....      |            |            |            |
| Tidal observations.....                             |            |            |            |
| Gratuities.....                                     |            |            |            |
| Survey, Burrard inlet.....                          |            |            |            |
| Export cattle trade.....                            |            |            |            |
| Survey, Bay of Quinte.....                          |            |            |            |
| Relief of distressed Canadians.....                 |            |            |            |
| Manning ships.....                                  |            |            |            |
| Widow of late A. Warren.....                        |            |            |            |
| McDonald Bros.....                                  |            |            |            |
| Parliamentary returns.....                          |            |            |            |
| Investigating effect of Chicago drainage canal..... |            |            |            |
| John McDonald.....                                  |            |            |            |
| Longitude, Montreal.....                            |            |            |            |
| Marine biological station.....                      |            |            |            |
|   | 761,730 62 | 774,831 53 | 825,010 82 |





2 GEORGE V., A. 1912

## STATEMENT of expenditure by the Marine Department

|                                    | 1892.      | 1893.      | 1894.      | 1895.      | 1896.      | 1897.      |
|------------------------------------|------------|------------|------------|------------|------------|------------|
|                                    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    |
| Maintenance of lights—             |            |            |            |            |            |            |
| Above Montreal.....                | 87,033 61  | 87,598 15  | 78,090 69  | 82,541 16  | 82,256 28  | 80,961 06  |
| Montreal District.....             |            |            |            |            |            |            |
| Below Québec.....                  | 116,531 27 | 120,404 19 | 124,348 80 | 124,763 81 | 124,143 66 | 126,186 00 |
| Nova Scotia.....                   | 148,815 26 | 150,445 26 | 137,339 73 | 140,977 53 | 123,234 65 | 124,671 19 |
| New Brunswick.....                 | 66,886 69  | 71,079 46  | 59,917 96  | 69,654 46  | 63,018 64  | 56,871 02  |
| Prince Edward Island..             | 17,069 98  | 16,819 64  | 15,569 39  | 17,976 67  | 17,988 15  | 16,429 23  |
| British Columbia.....              | 26,858 68  | 24,413 27  | 27,240 77  | 21,734 18  | 24,770 44  | 25,679 52  |
| General account.....               |            |            |            |            |            |            |
| Construction—                      |            |            |            |            |            |            |
| Above Montreal.....                | 21,704 05  | 8,766 62   | 12,581 15  | 2,699 40   | 11,993 84  | 9,527 94   |
| Québec.....                        | 809 27     | 10,097 18  | 4,743 13   | 3,004 14   | 3,300 30   | 296 26     |
| Nova Scotia.....                   | 1,965 16   | 4,381 24   | 3,104 77   | 4,737 03   | 1,842 94   | 61 71      |
| New Brunswick.....                 | 1,845 35   | 1,271 15   | 115 45     | 1,597 80   | 200 00     | 1 60       |
| Prince Edward Island..             | 1 56       | 2,958 61   | 1,604 00   |            |            | 452 90     |
| British Columbia.....              | 9,478 81   |            | 6,356 43   | 180 83     | 225 50     | 569 99     |
| Lake St. Peter.....                |            |            |            |            |            |            |
| New Dredge.....                    |            |            |            |            |            |            |
| Dominion Steamers—                 |            |            |            |            |            |            |
| Québec.....                        |            |            |            |            |            |            |
| Nova Scotia.....                   |            |            |            |            |            |            |
| New Brunswick.....                 | 145,899 61 | 163,097 46 | 178,183 97 | 169,661 64 | 145,315 28 | 136,940 11 |
| Prince Edward Island..             |            |            |            |            |            |            |
| British Columbia.....              |            |            |            |            |            |            |
| Naval Schools.....                 |            |            |            |            |            |            |
| Examinations of masters            |            |            |            |            |            |            |
| and mates.....                     | 6,363 88   | 4,116 99   | 3,745 33   | 2,757 29   | 4,062 82   | 3,536 29   |
| Hudson's Bay expedition..          |            |            |            |            |            | 19,091 32  |
| Investigation into wrecks..        | 603 21     | 643 49     | 850 81     | 351 15     | 483 98     | 565 25     |
| Lighthouse depot, Georgian         |            |            |            |            |            |            |
| Bay.....                           |            |            |            |            |            |            |
| Marine Hospitals.....              | 34,106 83  | 35,757 07  | 38,403 94  | 38,589 05  | 36,682 96  | 37,984 71  |
| Meteorological service.....        | 67,138 06  | 61,165 60  | 66,440 96  | 64,588 34  | 66,600 29  | 67,397 71  |
| Registration of Canadian           |            |            |            |            |            |            |
| shipping.....                      | 462 59     | 1,476 19   | 394 00     | 207 40     | 517 60     | 531 55     |
| Removal of obstructions...         | 2,878 68   | 1,554 53   | 202 02     | 2,217 36   | 456 38     | 631 86     |
| Rewards for saving life.....       | 6,398 93   | 7,432 64   | 8,014 67   | 6,591 34   | 8,004 38   | 5,955 19   |
| Signal service.....                | 5,014 42   | 5,040 58   | 4,668 93   | 5,311 54   | 5,338 76   | 5,986 12   |
| Steamboat inspection.....          | 22,736 59  | 24,386 95  | 25,961 36  | 26,385 88  | 26,321 27  | 26,837 83  |
| Hydrographic surveys.....          | 16,451 10  | 17,542 11  | 31,461 76  | 12,653 28  | 15,099 63  | 12,352 99  |
| Ship channel.....                  | 6,161 60   | 5,436 23   |            |            |            |            |
| Civil Government.....              | 43,195 31  | 56,477 23  | 54,988 88  | 71,373 82  |            | 74,801 37  |
| Repairs to wharfs.....             |            | 84 90      | 1,007 67   | 824 38     | 2,644 69   | 1,795 56   |
| Purchase of steamer <i>Minto</i>   |            |            |            |            |            |            |
| Winter mail service, P. E. I.      | 3,309 44   | 4,376 96   | 6,497 03   | 6,138 18   | 7,779 69   | 21,931 05  |
| Tidal observations.....            | 711 59     | 5,099 17   | 10,172 61  | 11,507 24  | 9,627 45   | 13,166 20  |
| Gratuities.....                    |            |            | 3,261 32   |            |            |            |
| Survey, Burrard Inlet.....         | 2,580 45   |            |            |            |            |            |
| Export cattle trade.....           | 1,411 57   | 1,711 73   | 1,350 83   | 2,268 74   | 2,887 24   |            |
| Survey, Bay of Quinté.....         |            | 2,085 45   |            |            |            |            |
| Relief of distressed Cana-         |            |            |            |            |            |            |
| dians.....                         |            |            |            | 7 30       |            |            |
| Parliamentary returns.....         |            |            |            |            | 291 08     |            |
| Investigation effect Chica-        |            |            |            |            |            |            |
| go grain canal.....                |            |            |            |            | 2,500 00   |            |
| John MacDonald.....                |            |            |            |            | 200 00     |            |
| Unforeseen expenses.....           |            |            |            |            |            |            |
| Marine biological station..        |            |            |            |            |            |            |
| New life-saving station,           |            |            |            |            |            |            |
| Long Point.....                    |            |            |            |            |            |            |
| Salaries, temporary clerks..       |            |            |            |            |            |            |
| Steamer to replace <i>Bayfield</i> |            |            |            |            |            |            |
| Observatory, Sulphur Mtn.          |            |            |            |            |            |            |
| Charles Morrison.....              |            |            |            |            |            |            |
| Montreal Pilotage Commis-          |            |            |            |            |            |            |
| sioners.....                       |            |            |            |            |            |            |
| Montreal wireless tele-            |            |            |            |            |            |            |
| graphy.....                        |            |            |            |            |            |            |

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from Confederation to March 31, 1910—Continued.

| 1898.      | 1899.      | 1900.      | 1901.      | 1902.      | 1903.      | 1904.      | 1905.        |
|------------|------------|------------|------------|------------|------------|------------|--------------|
| \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.      |
| 87,841 22  | 92,751 23  | 82,810 92  | 93,708 16  | 92,195 52  | 117,896 37 | 154,194 26 | 244,960 38   |
| 126,336 00 | 136,134 79 | 122,112 42 | 132,147 88 | 154,839 06 | 148,302 34 | 170,554 10 | 273,865 74   |
| 116,279 88 | 65,072 35  | 122,414 86 | 142,359 01 | 149,572 14 | 142,725 69 | 164,339 92 | 204,157 27   |
| 67,369 98  | 128,674 15 | 52,491 93  | 65,247 80  | 69,133 51  | 73,410 65  | 79,464 50  | 121,289 44   |
| 13,112 93  | 20,569 81  | 42,878 40  | 28,031 85  | 24,223 73  | 25,575 33  | 25,603 09  | 36,760 32    |
| 26,862 03  | 29,530 20  | 33,545 95  | 31,938 25  | 35,119 03  | 35,758 43  | 39,068 34  | 55,976 59    |
|            |            |            |            | 46 75      |            |            |              |
| 6,867 69   | 3,729 62   | 7,094 64   | 12,499 99  |            |            |            |              |
| 3,649 90   | 37,838 80  | 40,319 03  | 17,060 13  |            |            |            |              |
| 4,067 99   | 3,123 16   | 4,884 22   | 12,832 69  |            |            |            |              |
| 1,423 34   | 91 49      |            | 266 34     | 158,714 09 | 399,487 73 | 540,675 07 | 1,447,202 77 |
| 1,409 60   | 616 96     | 5,586 91   | 922 00     |            |            |            |              |
| 6,414 19   | 19,305 60  |            | 4,160 74   |            |            |            |              |
|            |            |            | 660 03     |            |            |            |              |
|            |            |            |            |            |            |            | 93,938 90    |
|            |            |            |            |            |            |            | 10,745 36    |
| 117,644 39 | 145,270 75 | 180,430 65 | 195,484 75 | 452,526 92 | 369,813 97 | 306,171 01 | 475,907 20   |
|            |            |            |            |            |            | 6,106 54   | 3,123 24     |
| 3,335 40   | 3,568 26   | 3,750 69   | 3,730 25   | 3,305 59   | 4,968 36   | 7,761 17   | 5,884 74     |
| 27,050 66  |            |            |            |            |            | 178,638 94 | 236,469 00   |
| 312 77     | 982 17     | 773 06     | 1,022 65   | 1,824 55   | 1,367 45   | 3,570 28   | 5,111 34     |
|            |            |            |            |            |            |            | 12,000 00    |
| 38,162 56  | 37,353 29  | 37,743 30  | 36,008 75  | 51,827 13  | 48,750 15  | 50,301 78  | 51,731 56    |
| 64,135 71  | 73,148 05  | 76,692 42  | 74,082 76  | 80,147 46  | 87,293 00  | 90,306 99  | 98,820 21    |
| 818 33     | 966 48     | 266 43     | 546 62     | 607 23     | 417 25     | 1,203 56   | 1,215 14     |
| 704 17     | 745 49     | 252 19     | 1,000 00   | 1,325 25   | 682 98     | 752 60     | 9,521 68     |
| 5,081 40   | 7,049 09   | 7,007 97   | 8,519 92   | 8,278 55   | 9,306 25   | 11,763 12  | 9,592 91     |
| 4,993 88   | 6,067 90   | 5,906 83   | 8,950 17   | 6,452 56   | 6,863 75   | 7,740 01   | 8,755 44     |
| 26,342 29  | 28,035 49  | 72,965 72  | 29,247 59  | 27,493 80  | 30,172 09  | 33,723 12  | 50,187 75    |
| 15,306 66  | 13,664 97  | 12,600 98  | 16,170 20  | 25,488 64  | 35,243 97  | 41,366 95  | 103,926 98   |
|            |            |            |            |            |            |            | 511,171 41   |
| 74,644 05  | 72,833 97  | 63,331 61  | 68,776 95  | 70,246 32  | 84,442 53  | 91,985 07  | 102,735 31   |
| 1,618 97   |            | 697 87     | 1,261 06   | 2,824 28   | 1,721 91   | 1,300 89   | 1,599 61     |
|            | 144,365 29 | 41,951 88  |            |            |            |            |              |
| 9,575 31   | 8,439 70   | 1,503 70   | 2,093 93   | 8,835 86   | 6,211 28   | 8,912 57   | 10,984 74    |
| 3,081 45   | 5,186 35   | 4,372 18   | 7,060 20   | 8,925 33   | 14,520 00  | 21,871 71  | 23,802 24    |
|            |            |            |            | 136 85     | 1,050 00   | 1,210 00   | 2,340 00     |
| 2,499 80   | 2,737 85   | 2,762 24   | 2,746 84   | 3,321 23   | 3,026 25   | 3,504 43   | 3,300 35     |
|            |            |            |            |            |            |            |              |
|            |            |            | 133 32     |            | 95 10      |            | 269 20       |
|            |            |            | 1,659 14   |            |            |            |              |
|            |            | 3,452 21   | 2,630 62   | 3,490 29   | 4,822 78   | 3,977 63   | 2,953 15     |
|            | 5,709 10   | 739 61     | 1,990 58   | 1,998 85   | 2,000 00   | 2,996 54   | 2,001 69     |
|            |            |            |            |            |            |            |              |
|            |            |            |            | 1,780 52   |            |            |              |
|            |            |            |            | 2,967 35   | 6,945 96   | 11,448 10  | 15,881 35    |
|            |            |            |            | 50,000 00  |            |            |              |
|            |            |            |            | 55 00      | 3,167 62   |            |              |
|            |            |            |            | 223 00     |            |            |              |
|            |            |            |            | 3,691 69   |            |            |              |
|            |            |            |            |            |            |            |              |
|            |            |            |            |            | 1,745 23   | 2,050 00   | 10,776 51    |

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## STATEMENT of expenditure by the Marine Department

|  | 1892.      | 1893.      | 1894.      | 1895.      | 1896.      | 1897.      |
|--|------------|------------|------------|------------|------------|------------|
|  | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    | \$ cts.    |
| Purchase land for wharf at<br>Halifax, N.S. ....         |            |            |            |            |            |            |
| Purchase land for wharf at<br>Charlottetown, P.E.I. .... |            |            |            |            |            |            |
| Schools for navigation. ....                             |            |            |            |            |            |            |
| Naval Militia. ....                                      |            |            |            |            |            |            |
| Cattle inspection. ....                                  |            |            |            |            |            |            |
| Wrecking plant. ....                                     |            |            |            |            |            |            |
| Ice breaking steamers. ....                              |            |            |            |            |            |            |
| S. Shaw ..   |            |            |            |            |            |            |
| Salaries, light keepers. ....                            |            |            |            |            |            |            |
| Agencies, rents, &c. ....                                |            |            |            |            |            |            |
| Maintenance and repairs. ....                            |            |            |            |            |            |            |
| Repairs to lighthships. ....                             |            |            |            |            |            |            |
| Construction and apparatus                               |            |            |            |            |            |            |
|  | 861,426 80 | 898,720 03 | 905,654 34 | 895,828 28 | 793,634 49 | 867,772 90 |

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from Confederation to March 31, 1910—*Continued.*

| 1898.      | 1899.        | 1900.      | 1901.        | 1902.        | 1903.        | 1904.        | 1905.        |
|------------|--------------|------------|--------------|--------------|--------------|--------------|--------------|
| \$ cts.    | \$ cts.      | \$ cts.    | \$ cts.      | \$ cts.      | \$ cts.      | \$ cts.      | \$ cts.      |
| .....      | .....        | .....      | .....        | .....        | 3,528 25     | 18,847 31    | 40,785 10    |
| .....      | .....        | .....      | .....        | .....        | .....        | 15,119 11    | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 13,000 00    | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 5,036 29     | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 9,135 87     | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 3,335 52     | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 25,000 00    | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 164,414 93   | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 39 33        | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 242,403 64   | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 29,739 50    | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 531,920 43   | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 23,560 00    | .....        |
| .....      | .....        | .....      | .....        | .....        | .....        | 1,605,718 59 | .....        |
| 856,192 50 | 1,102,601 90 | 982,561 97 | 1,029,925 32 | 1,501,618 88 | 1,671,494 77 | 2,150,940 31 | 4,747,722 81 |



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STATEMENT of expenditure by Marine Department from Confederation to March 31,  
1910--*Continued.*

|   | 1906.        |
|---|--------------|
|   | s cts.       |
| Dominion steamers—                                  |              |
| Quebec .....  | 587,885 89   |
| Nova Scotia .....                                   |              |
| New Brunswick .....                                 |              |
| Prince Edward Island .....                          |              |
| British Columbia .....                              |              |
| Examination of masters and mates .....              | 7,068 15     |
| Hudson's Bay expedition .....                       | 132,707 52   |
| Investigation into wrecks .....                     | 7,476 07     |
| Marine hospital .....                               | 50,120 42    |
| Meteorological service .....                        | 99,719 52    |
| Registration of Canadian shipping .....             | 1,800 00     |
| Removal of obstructions .....                       | 4,967 15     |
| Rewards for saving life .....                       | 11,991 43    |
| Signal service .....                                | 8,194 39     |
| Steamboat inspection .....                          | 37,590 22    |
| Hydrographic surveys .....                          | 120,359 63   |
| Ship channel .....                                  | 587,975 51   |
| Repairs to wharfs .....                             | 2,960 47     |
| Winter mail service, Prince Edward Island .....     | 16,680 58    |
| Total observations .....                            | 28,047 27    |
| Unforeseen expenses .....                           | 3,765 17     |
| Marine biological station .....                     | 2,914 03     |
| Salaries temporary clerks .....                     | 19,947 01    |
| Purchase land for wharf at Halifax, N.S. ....       | 88,032 87    |
| Schools for navigation .....                        | 5,636 29     |
| Naval Militia .....                                 | 9,135 87     |
| Cattle inspection .....                             | 3,335 52     |
| Wrecking plant .....                                | 25,000 00    |
| Ice-breaking steamers .....                         | 161,414 93   |
| S. Shaw .....                                       | 39 23        |
| Salaries lightkeepers .....                         | 212,403 64   |
| Agencies rents, &c. ....                            | 29,739 50    |
| Maintenance and repairs .....                       | 531,920 43   |
| Repairs to lightships .....                         | 33,560 00    |
| Construction and apparatus .....                    | 1,605,778 59 |
| Submarine signal apparatus .....                    | 50,547 60    |
| Administration of pilotage .....                    | 12,066 42    |
| Parry Sound Buoy Dept. ....                         | 11,711 17    |
| Compensation <i>re</i> explosion of gas buoys ..... | 38,686 49    |
| Water system, Partridge Island .....                | 2,957 37     |
| Observatory, Toronto .....                          | 2,872 96     |
| " " Montreal .....                                  | 500 00       |
| Hydrographic steamer, <i>Atlantic Coast</i> .....   | 45,500 00    |
| " " <i>Pacific Coast</i> .....                      | 370 01       |
| New dredge No. 15 .....                             | 150,001 32   |
| " <i>Galveston</i> .....                            | 159,847 89   |
| Shipwrecked and distressed seamen .....             | 598 81       |
| Parliamentary returns .....                         | 493 11       |
| Gratuities .....                                    | 616 66       |
| Civil Government, salaries .....                    | 88,453 31    |
| " " contingencies .....                             | 19,606 45    |
|   | 5,066,252 66 |

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STATEMENT of expenditure by Marine Department from Confederation to March 31,  
1910—Continued.

| Services.  | Amount.      | Total<br>1907. |
|--|--------------|----------------|
|  | \$ cts.      | \$ cts.        |
| Ocean and River—                                     |              |                |
| Dominion steamers....                                | 447,139 03   |                |
| Examination of masters and mates.....                | 5,934 16     |                |
| Rewards for saving life—life boats, &c.....          | 9,015 89     |                |
| Investigation into wrecks.....                       | 8,662 16     |                |
| Schools for navigation.....                          | 4,891 69     |                |
| Registration of Canadian shipping.....               | 1,506 53     |                |
| Removal of obstructions in navigable waters.....     | 7,377 20     |                |
| Tidal service.....                                   | 19,214 63    |                |
| Marine biological stations.....                      | 11,998 01    |                |
| Cattle inspection.....                               | 1,537 04     |                |
| Wrecking plant.....                                  | 2,143 80     |                |
| Wrecking plant.....                                  | 15,000 00    |                |
| Hudson's Bay experience.....                         | 33,871 95    |                |
| " " patrol box.....                                  | 29,977 91    |                |
| Ice-breaking steamer, <i>Lady Grey</i> .....         | 6,293 51     |                |
| Quebec Coal Company's claim.....                     | 1,000 00     |                |
| Arresting two sailors of the <i>Hector</i> .....     | 148 75       |                |
| H. M. Stewart, clothing destroyed by fire.....       | 171 00       |                |
| Unforeseen expenses.....                             | 3,218 62     | 669,777 04     |
| Lighthouse and coast—                                |              |                |
| Salaries and allowances of lightkeeper.....          | 197,235 03   |                |
| Agencies, rents and contingencies.....               | 22,080 58    |                |
| Maintenance and repairs to lighthouse.....           | 499,507 86   |                |
| Contracts of lighthouse and apparatus.....           | 1,159,906 40 |                |
| Breaking ice in Thunder Bay.....                     | 21,303 85    |                |
| Signal service.....                                  | 6,359 68     |                |
| Marconi stations.....                                | 53,532 19    |                |
| Pilotage.....  | 21,490 73    |                |
| Repairs to wharfs.....                               | 1,747 15     |                |
| Salaries, temporary clerks.....                      | 14,477 16    |                |
| Georgian Bay and Parry Sound buoys.....              | 4,500 43     | 2,002,727 06   |
| Scientific institutions and hydrographic surveys—    |              |                |
| Observatory, Toronto.....                            | 2,313 67     |                |
| " Kingston.....                                      | 375 00       |                |
| " Montreal.....                                      | 375 00       |                |
| Meteorological service.....                          | 75,163 20    |                |
| Hydrographic survey.....                             | 84,435 32    | 161,662 19     |
| Dredge No. 15.....                                   |              | 150,000 00     |
| Cap à la Roche.....                                  |              | 1,347 87       |
| <i>Galveston</i> .....                               |              | 50,089 77      |
| Shipman.....   |              | 419,398 19     |
| Compensation to L. O'Brien.....                      |              | 2,200 00       |
| Marine hospital.....                                 | 37,362 11    |                |
| Shipwrecked and distressed seamen.....               | 703 56       |                |
| Steamboat inspection.....                            |              | 38,156 67      |
| Returns for Parliament.....                          | 634 36       | 32,459 55      |
| K. Falconer, reorganizing system of bookkeeping..... | 35,000 00    |                |
| Civil Government, salaries.....                      | 68,395 81    | 25,634 36      |
| " " contingencies.....                               | 14,182 31    |                |
| Total, Marine Branch.....                            |              | 83,178 12      |
| " Fisheries.....                                     |              | 3,637,599 82   |
| Fishing bounty.....                                  |              | 534,669 90     |
|  |              | 159,015 75     |
|  |              | 4,331,255 47   |

STATEMENT of expenditure by Marine Department from Confederation to March 31,  
1910—*Continued.*

|  | Amount.    | Total, 1908. |
|--|------------|--------------|
|  | \$ cts.    | \$ cts.      |
| <i>Ocean and River Service—</i>                          |            |              |
| Dominion steamers and ice-breakers.....                  | 669,428 59 |              |
| Examination of masters and mates.....                    | 11,508 31  |              |
| Rewards for saving life.....                             | 31,642 41  |              |
| Investigations into wrecks.....                          | 6,543 08   |              |
| Schools of navigation.....                               | 7,378 07   |              |
| Registration of shipping.....                            | 1,982 70   |              |
| Removal of obstructions.....                             | 26,009 59  |              |
| Tidal service.....                                       | 30,077 40  |              |
| Winter mail service.....                                 | 11,019 79  |              |
| Cattle inspection.....                                   | 3,503 90   |              |
| Wrecking plants.....                                     | 30,000 00  |              |
| Unforeseen expenses.....                                 | 1,301 61   |              |
| Naval militia.....                                       | 9,078 17   |              |
| Patrolling waters in northern portion of Canada.....     | 34,796 49  |              |
| New ice-breaking steamer.....                            | 5,974 61   |              |
| Returns to Parliament.....                               |            | 881,054 56   |
| <i>Public Works—Chargeable to Capital—</i>               |            |              |
| Ship channel.....  | 761,916 84 |              |
| Permanent piers in Lake St. Peter, &c.....               | 116,663 87 |              |
| Dredging, Cap à la Roche.....                            | 75,000 00  |              |
| Dredge, Beaujeu.....                                     | 100,000 00 |              |
| Spur line, Sorel shipyard.....                           | 8,815 05   |              |
| Montreal and Quebec Signal Service.....                  | 12,232 15  | 1,074,027 91 |
| <i>Lighthouse and Coast Service—</i>                     |            |              |
| Agencies, rents and contingencies.....                   | 29,359 26  |              |
| Salaries and allowance to lightkeepers.....              | 285,050 14 |              |
| Maintenance and repairs to lighthouses.....              | 689,319 86 |              |
| Parry Sound buoy depot.....                              | 41,983 93  |              |
| Construction of lighthouses, &c.....                     | 715,572 91 |              |
| Construction of apparatus.....                           | 801,626 83 |              |
| Wireless stations.....                                   | 114,986 60 |              |
| Signal service.....                                      | 79,350 28  |              |
| Administration of pilotage.....                          | 31,087 22  |              |
| Maintenance and repairs to wharfs, &c.....               | 1,456 86   |              |
| Maintenance and upkeep of dock yards.....                | 30,656 22  |              |
| Breaking ice, Lake Superior, &c.....                     | 37,053 32  |              |
| Salaries of temporary clerks, &c.....                    | 16,728 99  |              |
| Telephone reporting stations below Montreal.....         | 7,820 68   |              |
| Steamer for the Great Lakes.....                         |            |              |
| Service of expert accountants.....                       | 13,066 34  |              |
| Charter of steamer, Lime Kiln Crossing.....              | 6,650 00   |              |
| Keeping lights on 'Castle' and 'Arminia'.....            | 3,680 00   | 2,835,459 44 |
| <i>Scientific Institutions and Hydrographic Surveys—</i> |            |              |
| Meteorological service.....                              | 122,572 86 |              |
| Magnetic observatory.....                                | 2,918 20   |              |
| Montreal observatory.....                                | 500 00     |              |
| Kingston observatory.....                                | 500 00     |              |
| Hydrographic surveys.....                                | 115,631 31 |              |
| Hydrographic survey steamer for B.C.....                 | 107,250 00 | 340,373 37   |
| Marine hospital.....                                     | 59,957 92  |              |
| Shipwrecked and distressed seamen.....                   | 342 25     |              |
| Marine hospital at Yarmouth, N.S.....                    | 7,285 00   | 67,585 17    |
| Steamboat inspection.....                                | 42,210 43  |              |
| <i>Fisheries—</i>  |            | 800,081 73   |
| Civil Government Salaries, Marine and Fisheries.....     | 163,916 53 |              |
| Contingencies of Marine and Fisheries.....               | 21,146 77  | 125,063 30   |
| Total expenditure Marine and Fisheries.....              |            | 6,174,855 91 |
| 1908 fishing bounty.....                                 |            | 156,114 50   |

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STATEMENT of expenditure for the year 1910—*Concluded*.

| Service.   | Vote.        | Total, 1909.<br>Expenditure. | Balance.     |
|--|--------------|------------------------------|--------------|
|  | \$ cts.      | \$ cts.                      | \$ cts.      |
| Scientific institutions and hydrographic surveys—                                  |              |                              |              |
| Meteorological Service.....  | 127,300 00   | 121,657 10                   | 5,642 90     |
| Magnetic observatory.....  | 3,200 00     | 1,674 79                     | 1,525 21     |
| Montreal observatory.....  | 500 00       | 500 00                       |              |
| Kingston observatory.....  | 500 00       | 500 00                       |              |
| Hydrographic surveys.....  | 170,000 00   | 120,239 77                   | 49,760 23    |
| Hydrographic survey steamer to replace <i>Da Canadienne</i> .....                  | 150,000 00   | 149,999 99                   | 1            |
|  | 451,500 00   | 394,571 65                   | 56,928 35    |
| Marine hospitals—  |              |                              |              |
| Care of sick seamen and repairs to hospitals.....                                  | 70,000 00    | 63,709 16                    | 6,290 84     |
| Shipwrecked and distressed seamen.....   | 3,000 00     | 2,640 10                     | 350 96       |
|  | 73,000 00    | 66,349 26                    | 6,650 74     |
| Steamboat inspection.....  | 53,300 00    | 40,782 77                    | 12,517 23    |
| Fisheries—   |              |                              |              |
| Salaries and disbursements of Fishery officers.....                                | 195,780 00   | 173,271 52                   | 22,508 48    |
| Services of K. W. McKenzie as special guardian.....                                | 125 00       | 125 00                       |              |
| Fish breeding.....   | 322,300 00   | 180,345 65                   | 141,954 35   |
| Services of W. S. Young in 1908.....   | 100 00       | 100 00                       |              |
| Services of W. S. Young in 1909.....   | 100 00       | 100 00                       |              |
| Fisheries protection service.....  | 304,200 00   | 295,443 47                   | 8,756 53     |
| Oyster culture.....  | 6,000 00     | 4,234 48                     | 1,765 52     |
| Cold storage.....  | 40,000 00    | 14,504 98                    | 25,495 02    |
| Dog fish reduction works.....  | 50,000 00    | 33,593 20                    | 16,406 80    |
| Souris fish curing establishments.....   | 12,000 00    |                              |              |
| Proceeds of sale reverting to vote.....  | 1,728 86     | 724 74                       | 13,004 12    |
| Canadian Fisheries exhibits.....   | 16,000 00    | 3,228 51                     | 12,771 49    |
| Distributing of fish bounty.....   | 5,000 00     | 5,045 56                     | 554 44       |
| Building fishways.....   | 10,000 00    | 3,992 26                     | 6,007 75     |
| Legal and incidental expenses.....   | 4,000 00     | 1,412 28                     | 2,587 72     |
| Georgian Bay laboratory.....   | 1,500 00     | 1,426 87                     | 73 13        |
| F. P. S. Cruiser for Pacific Coast.....  | 220,500 00   | 218,585 60                   | 1,914 40     |
| Marine biological stations.....  | 15,000 00    | 12,059 92                    | 2,040 08     |
| Transportation of fresh fish.....  | 45,000 00    | 38,263 16                    | 6,736 84     |
| Fishery commissions.....   | 15,000 00    | 6,733 74                     | 8,266 26     |
| International Fishery commission.....  | 10,000 00    | 1,094 67                     | 8,905 33     |
| Expenses, inquiries into Prov'l rights <i>re</i> fisheries.....                    | 10,000 00    |                              | 10,000 00    |
| Service of customs officers issuing licenses to United States Fishing vessels..... | 700 00       | 528 22                       | 171 78       |
| Services of officers <i>re</i> Fisheries Intelligence bureau.....                  | 500 00       | 370 26                       | 129 74       |
|  | 1,286,133 86 | 906,084 08                   | 290,049 78   |
| Recapitulation—  |              |                              |              |
| Ocean and river service.....   | 1,035,000 00 | 803,921 09                   | 231,078 91   |
| Public works chargeable to capital.....  | 1,200,000 00 | 1,011,957 84                 | 188,042 12   |
| Lighthouse and coast service.....  | 2,372,172 74 | 2,127,943 61                 | 244,229 13   |
| Scientific institutions and hydrographic surveys.....                              | 451,500 00   | 394,571 65                   | 56,928 35    |
| Marine hospitals.....  | 73,000 00    | 66,349 26                    | 6,650 74     |
| Steamboat inspection.....  | 53,300 00    | 40,782 77                    | 12,517 23    |
| Fisheries.....   | 1,286,133 86 | 996,048 08                   | 290,049 78   |
| Civil government salaries.....   | 236,390 00   | 220,611 23                   | 15,778 77    |
| Contingencies.....   | 27,000 00    | 26,633 36                    | 366 64       |
|  | 6,734,490 60 | 5,688,854 93                 | 1,045,047 67 |

See expenditure for 1910-11 in Appendix No. 5.



## APPENDIX No. 8.

## METEOROLOGICAL SERVICE.

TORONTO, July 21, 1911.

SIR,—I have the honour to submit the fortieth annual report of the Meteorological Service, this report being for the fiscal year ended March 31, 1911, with appendices A and B, reports of the observatories at St. John, N.B. and Quebec.

The number of persons in receipt of pay from the Meteorological Service, for various duties performed in connection therewith has been 251. Of this number 25 have been employed in the central office and these together with a few at outside stations devote their whole time to the work of the service, others are occupied in observing during only a portion of each day and others again are employed only to attend to the display of storm signals when notified.

Since the issue of the last report the following stations have been opened:

## BRITISH COLUMBIA.

|          |                         |                     |
|----------|-------------------------|---------------------|
| Class II | Chilliwack.. . . .      | J. H. Chapman.      |
|          | Canoe Point.. . . .     | Harrison and Berry. |
|          | Stewart.. . . .         | W. H. Marston.      |
|          | Boswell.. . . .         | R. T. Hickes.       |
| III      | Alkali Lake.. . . .     | C. E. Johnson.      |
|          | Swift River dam.. . . . | John Likely.        |
|          | Bear Creek.. . . .      | William McCallum.   |

## ALBERTA.

|          |                       |                          |
|----------|-----------------------|--------------------------|
| Class II | Loveland.. . . .      | Otto Richter.            |
|          | Blairmore.. . . .     | R. W. Coulthard.         |
|          | Endiang.. . . .       | H. Wehner.               |
|          | Wells Siding.. . . .  | C. L. Bartlett.          |
|          | Tyrol.. . . .         | J. A. McCartney.         |
| III      | Loch Sloy.. . . .     | Hugh MacFarlane.         |
|          | Elkwater.. . . .      | G. H. Sinibut.           |
|          | Brooks.. . . .        | J. Wilde.                |
|          | Campsie.. . . .       | W. Wallace.              |
|          | Tilley.. . . .        | P. Marchin.              |
|          | Raymond.. . . .       |                          |
|          | Milk River.. . . .    |                          |
|          | Lyndon.. . . .        | W. A. Lyndon.            |
|          | Caldwell.. . . .      | Miss Polly Christiansen. |
|          | Minda.. . . .         | Sidney Hooper.           |
|          | Lineham.. . . .       | Vine Bros.               |
|          | Maycroft.. . . .      | A. C. Raper.             |
|          | Seven Persons.. . . . | H. H. Foster.            |
|          | Playle Creek.. . . .  | A. H. Playle.            |

## SASKATCHEWAN.

|          |                         |                     |
|----------|-------------------------|---------------------|
| Class II | Big River.. . . .       | J. C. McLeod.       |
|          | Larchmont.. . . .       | Wm. S. Simpson.     |
|          | Rathmullen.. . . .      | C. G. Annable.      |
|          | Strassburg.. . . .      | E. S. Agnew.        |
|          | Oliver.. . . .          | J. Saunderson.      |
|          | Heart's Hills.. . . .   | K. R. Sterzer.      |
|          | Maple Creek (2).. . . . | E. G. Walker.       |
|          | Maple Creek.. . . .     | Wilfrid Jones.      |
|          | Brownlee.. . . .        | W. Macpherson.      |
|          | Kindersley.. . . .      | J. J. Smithson.     |
|          | Rosthern.. . . .        | Experimental Farm.  |
|          | File Hills.. . . .      | Miss J. Cunningham. |
|          | Stanley Mission.. . . . | Rev. James Brown.   |
| III      | Kelvinhurst.. . . .     | Isaac Stirling.     |
|          | Battle Creek.. . . .    | M. D. Maclean.      |
|          | Gull Lake.. . . .       | T. F. Thompson.     |
|          | Carmichael.. . . .      | W. R. Holding.      |
|          | Fort Walsh.. . . .      | W. Anderson.        |
|          | Forks.. . . .           | K. Sinclair.        |

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## KEEWATIN.

- Class I The Pas... .. Gideon Halcrow, Sr.  
 Split Lake... .. Rev. C. G. Fox.

## MANITOBA.

- Class II Aitkensville... .. Wm. Aitken.  
 Ninga... .. H. Cawley.  
 Dauphin... .. A. Malcolm.

## ONTARIO.

- Class I Cochrane... .. W. McD. Douglas.  
 II Collingwood... .. J. F. Metcalf.  
 Montreal River... .. A. R. Webster.  
 St. Catharines... .. J. Watson.  
 Porcupine... .. C. M. White.

## QUEBEC.

- Class II Shawbridge... .. G. W. O. Mathews.  
 Chicoutimi... .. H. B. Powell.  
 III Temiskaming... .. Construction Staff.  
 Quinze Dam... .. S. B. Hull.

## NOVA SCOTIA.

- Class I Wolfville... .. Prof. W. A. Coit.  
 II Antigonish... .. A. G. Macdonald.

## PRINCE EDWARD ISLAND.

- Class II Charlottetown... .. Experimental Farm.

## NEWFOUNDLAND.

- Class I Fogo... .. A. Stone.

There are now in the Dominion, Newfoundland and Bermuda, 469 stations from which either daily, weekly or monthly meteorological reports are received. At the majority of these stations the observing is performed voluntarily and much of our knowledge of the climatology of Canada is due to the work of zealous observers who give their time and assistance to the cause of science without remuneration. The stations reporting by telegraph to the central office for the purposes of the weather map have during the year been increased by the addition of Triangle island, B.C., the Pas, Keewatin, Cochrane, Ont. and Fogo, Newfoundland and observing stations at Vancouver and Prince Rupert have been substituted for New Westminster and Fort Simpson. The storm signal display stations now number 99, including two new stations at Margaree harbour and Petite de Grat and at some seven other ports signal masts are in course of construction.

## INSPECTION OF STATIONS.

During the year many of the stations were inspected by officials from the central Ingonish, Neil's Harbour, Dingwall, Bay St. Lawrence, L'Ardoise, N.S., were necessary repairs, also certain localities visited to ascertain the necessity for the extension of the service in those districts.

Cranberry Head, Little Bras D'Or, New Campbellton, Breton Cove, North Ingonish, Neil's Harbour, Dingwall, Bay St. Lawrence, L'Ardoise, N.S., were inspected by Mr. B. C. Webber, this visit leading to the establishment of storm signal display stations at all of these ports. Mr. Webber also inspected Southampton, Grimsby, Stonecliffe, Renfrew, Prince Rupert, Victoria, Vancouver, Banff, Calgary, Edmonton, Battleford, Prince Albert, Swift Current, Qu'Appelle and Winnipeg.

The Pas, Keewatin and Cochrane, Ont., were opened as telegraph reporting stations, the equipment being installed and observers instructed by Mr. W. D. Allan, who also instructed the new observer at Medicine Hat, and inspected the stations at Sault Ste.

Marie, Port Arthur, Fort William, Kenora, Winnipeg, Swan river, Dauphin, Pipestone, Virden, Brandon, White River, Englehart, Collingwood and Moosejaw.

The stations on the McKenzie river were inspected by Mr. W. E. W. Jackson, who visited Forts McMurray, Chipewyan, Smith, Resolution, Simpson, Norman, Good Hope, McPherson, Rae and Hay River.

Mr. F. O'Donnell inspected the stations at Oakville, South West Anticosti, Point Riche, Point Amour, Cape Norman, Belle Isle, Bird Rocks, Natashquan, Esquimaux Point, Cape Whittle, Magpie and Shelldrake.

Collingwood, Woodford, Owen Sound, Goderich, Bayfield, Stratford, Brantford, Paris, Burlington, Port Dover and Port Dalhousie were inspected by Mr. A. J. Connor.

Mr. E. Baynes Reed visited Yale, Lytton, Barkerville, Kamloops, Tranquille, and Spences Bridge and the new telegraph reporting station at Triangle island was equipped, and the observer instructed by Mr. F. Napier Denison.

Mr. D. L. Hutchinson visited Wolfville.

York Factory, Fort Churchill and Norway House were visited by Mr. Charles Savary while he was in the north and a report was made on the conditions of the stations.

In September the director attended a meeting of the International Meteorological Committee and of the International Committee of Research in terrestrial magnetism of which committees he is a member. Many questions relative to co-operation in meteorological work were discussed and arrangements were made for bringing into use a system of International storm signals.

#### THE CENTRAL OFFICE.

The new central meteorological office in Toronto is proving admirably adapted for the requirements of the service and the several branches of research work, now possible with the ample accommodation provided, can be carried on with every facility.

A strong effort is being made to bring the Annual Climatological Report more nearly up to date, the last issued is that for 1907, in two parts, containing 748 pages, the volume for 1908 is with the printer and the manuscript for 1909 is ready for the printer. The other publications of the service, including the daily Weather Map, the Monthly Weather Review and the Monthly Weather Map, have been issued with regularity and the annual report of the Toronto observatory, which was much in arrears, has been brought up to date.

With the ample library accommodation now provided, it has been possible to gather together and catalogue the reports of the many meteorological departments of the world and in future as publications are received they can be placed immediately on the proper shelf. A small amount of binding has been done this year, but it is intended during the coming year to try and get the valuable reports of all central offices of the various countries bound, and thereby increase their value for purposes of references.

The ordinary work of the service has continued without any break throughout the year. Forecasts to the number of 14,945 were issued from the central office to all the provinces between the Rocky mountains and the maritime provinces and to these 86.1 per cent were verified. (Table attached.) In the Pacific Coast division 4,823 forecasts were issued with a verification of 83.2 per cent; 1,690 storm warnings were issued to ports on the Great Lakes and along the Atlantic seaboard and of these 91.1 per cent was verified. Warnings and forecasts have been furnished to Newfoundland with the same regularity as to the Canadian provinces. The almost universal recognition of the value of weather forecasts to mariners, farmers, merchants and shippers of perishable goods, is very clearly indicated by a rapidly growing demand for their dissemination through country districts and along the coast line and it is now obvious that a scheme must be devised whereby the central office of all rural telephone lines shall receive a weather bulletin each day for transmission to subscribers.



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The stations organized in 1908 in the valley of the Mackenzie river are proving of much value and it is evident that the various agents are very capable observers. It is satisfactory that with these stations and those on the shores of the Hudson bay, it is now possible on most days to draw the isobars with fair accuracy to the most northerly confines of Canada.

## TIME SERVICE.

At Toronto during the year ending March 31, 1911, 57 observations for time were made in the meridian. The positions of the stars were as usual those given in the 'Berliner Jahrbuch.'

The exchanges of time between Toronto and the Observatories at Quebec, Montreal and St. John, have been carried on at intervals of about a fortnight. A table is appended giving the results obtained. All these exchanges have been registered on the chronograph. Time has also been sent weekly to the Magnetic Observatory at Agincourt and furnished daily to the city by striking the fire alarm bells at 11.55 a.m. Numerous daily inquiries for time over the telephone are made and answered. During the year a number of Surveyor's Sidereal watches have been adjusted and rated previous to and after their season's work.

The various instruments such as the transit instrument, sidereal and mean time clocks and equatorial telescope are now fully installed and in good working order, the clocks especially showing a great improvement in their running rates.

No important changes have been made in that portion of the Dominion time service which is under the control of the Meteorological Service. Signals continue to be automatically repeated from the land telegraph to the wireless at Camperdown, N.S., and many captains have vouched for the usefulness of the signals, which are picked up when the ships are still far from land.

The equatorial telescope has been chiefly used in obtaining maps of the Sun's surface. Some photographic work was tried during May and June, 1910, on Halley's comet and one or two very good pictures were obtained. The comet was first seen in the telescope on May 4, and a photograph taken of it in a small 5" x 4" camera attached to the tube of the telescope, an exposure of 15 minutes being given. Subsequently a larger lens of 3" aperture with a 6½" x 8½" plate was used and several good photographs were made after the comet had passed through perihelion and appeared in the western evening sky. Observations were made during the night of May 18, when the earth was supposed to pass through the tail of the comet. The night was beautiful and fine with the Moon shining brightly. A rather brilliant aurora occurred, streamers and an auroral arch were noticed at 10.13 p.m. and at 10.20 rapid pulsations and a certain formation moving and changing rapidly, the lower edges being of a deep colour. This condition lasted only a few minutes. At midnight there was still a glow in the north with occasional streamers. Nothing further occurred to indicate that the earth had passed through the comet's tail. During the period of visibility of the comet in May and the early part of June, a great many visitors were afforded an opportunity to view the comet through the 6" telescope. Arrangements have been made to photograph the Sun during periods of sun spot visibility and preliminary trials were made during the latter part of February and the first two weeks of March. The camera for this purpose is an oblong tapering light tight box, one end of which is made to receive an 8½" x 6½" plate holder, and into the other end is fitted a diverging lens sliding into a collar which is threaded so as to enable it to be screwed into the eye end of the equatorial telescope, thus taking the place of the ordinary telescopic eye piece. A yellow green glass light filter is placed in the camera between the shutter and the plate holder. The shutter is in a thin plate of aluminium 6 inches in length and 2½ inches wide, across the centre of which is cut a narrow slit. The shutter is driven with great rapidity, the slit passing through the cone of light from the Sun.



The shutter is placed immediately behind the diverging lens. The image of the Sun thus projected upon the sensitive plate is 135 millimeters in diameter.

Maps of the Sun's surface have been taken daily since September 2, whenever the state of the sky permitted. These maps are 120 millimeters in diameter. The position of the Sun's axis and equator, the north and south points as well as the spots and faculae are marked thereon. Up to March 31, 1911, some 57 maps have been drawn and upon 19 days the sun has been observed free of spots.

On September 2, a very moderate sized spot on S.E. limb of the Sun, disappearing over the west limb on September 11. There were seen also three small spots near the western limit. On September 20, was observed a moderate sized spot with Penumbra on S.E. quadrant followed by one or two small spots at some distance apart.

On September 27, a very large group came over the S.E. limb and by October 1 had developed into a most beautiful spectacle extending longitudinally some 140,000 miles. The spot noticed on the 20th disappeared over the W. limb on October 2, rather increased in size. On October 17, a group appeared over the S.E. limb followed by a smaller group on the 18th, and another one about the 20th, these smaller groups gradually breaking up and finally disappearing by November 3. The Sun since has been remarkably free of spots, only on a very few occasions have any been seen and these were small. A very decided minimum period is apparently taking place.

The following table shows the difference between the times at Quebec, Montreal and St. John, at the various time exchanges, compared with that at Toronto. The sign + indicates that Toronto is slow of the other observatories.

| Year.             | Quebec.  | Montreal. | St. John. |
|-------------------|----------|-----------|-----------|
| 1910.             | Seconds. | Seconds.  | Seconds.  |
| April 15.....     | -0 33    | +0 31     | +0 22     |
| " 29.....         | +0 13    | +1 62     | +0 16     |
| June 3.....       | +5 69    | +1 41     | +0 86     |
| " 24.....         | -0 51    | +0 71     | +0 38     |
| July 15.....      | -0 71    | +0 23     | +0 35     |
| August 12.....    | -0 05    | .....     | +0 62     |
| September 16..... | -0 21    | +0 01     | +0 38     |
| " 30.....         | -0 26    | +1 12     | +0 51     |
| October 14.....   | -0 91    | +1 12     | +0 40     |
| November 25.....  | -0 32    | .....     | +0 44     |
| December 9.....   | -0 64    | +0 87     | +0 57     |
| " 30.....         | -0 42    | +0 58     | +0 52     |
| 1911.             |          |           |           |
| January 13.....   | +1 15    | +1 83     | +0 95     |
| February 24.....  | +0 02    | +0 02     | +0 18     |
| March 10.....     | +0 87    | +0 99     | +0 75     |
| " 24.....         | +0 66    | +0 48     | +0 61     |

On April 29, 1910, Toronto and Ottawa exchanged time, the difference being Ottawa 0.65 seconds fast of Toronto.

The latitude and longitude of the Toronto transit pier is:—

Latitude, 43° 40' 0.8" N.

Longitude, 5h. 17m. 35s. 60 W.

#### SEISMOLOGICAL OBSERVATIONS.

The Milne seismographs at Toronto and Victoria have been kept in operation throughout the year. Ninety-three disturbances being recorded by the former and 90 by the latter. The only really large disturbance was from an Alaskan quake on November 6, 1910, when the Victoria instrument recorded a swing of 17 m.m. and the

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Toronto instrument 4m.m. Moderate disturbances of unknown origin were recorded on May 13 and 31, and June 16, while the Turkestan quake of January 3 and the Italian quake of February 18 were clearly registered. To the present time seismology has not been organized as a subject for special research in connection with the meteorological service, and yet Mr. F. N. Denison, of Victoria, B.C., has for some years been carrying on investigations which now promise to yield valuable results. Twice each year tables giving details of all disturbances are forwarded to the secretary of the Seismological Committee of the British Association and to various other seismological bureaux in Europe and the United States.

## MAGNETIC OBSERVATORY.

There have been no breaks in the magnetic records at the Agincourt observatory. The zeros of instruments were determined by absolute observations, taken weekly for declination and bi-monthly for horizontal force. Weekly observations were also made for the determination of the inclination. The westerly declination has changed from  $6^{\circ} 2.6'$  in March, 1910, to  $6^{\circ} 7.1'$  in March, 1911, an increase of  $4.5'$ . The horizontal force has gradually decreased from 0.16274 C.G.S. units to 0.16232 and the inclination has increased from  $74^{\circ} 38'.6$  to  $74^{\circ} 39'.2$ .

Magnetic disturbances were of frequent occurrence throughout the year, but were small in amplitude. In declination the greatest variation was recorded on August 9 and 10, 1910, amounting to  $1^{\circ} 49'.1$ , the horizontal force at the same time passed beyond the range of the recording instrument. The second largest disturbance was also recorded in August on the 21st and 22nd, when the range of declination was  $1^{\circ} 18'.8$  and of horizontal force 532.5. The normal diurnal range for August in declination is about 15 minutes and horizontal force 45.

During the year 54 theodolites with magnets attached, belonging to surveyors employed by the Surveys Branch, Department of the Interior, were compared with the Agincourt Standard Declinometer and index corrections for the magnets were determined and supplied to the Surveyor General. Assistance was rendered to Messrs. Eangles, Carson, Chartrand and Cote of the surveys branch to make comparisons between their dip and total force instruments and our standards, in order to determine the constants of their instruments. Also to Messrs. French and Menzies of the Dominion Observatory, each of whom spent several days in standardizing and determining the various constants of their magnetometers and dip instruments both before and after their field work.

Instructions were given to Mr. Savary, of the Hydrographic Survey, and to Mr. Lavoie, who accompanied Capt. Bernier, on the manner of making magnetic observations and reducing them.

An officer of the meteorological service, Mr. W. E. W. Jackson, M.A., to whom was assigned the duty of inspecting the meteorological stations in the Mackenzie valley during the summer of 1910, was provided with a magnetometer with instructions to determine the magnetic values at various points when the opportunity offered. He took observations at Athabaska Landing, Grand Rapids, Fort McMurray, Fort McPherson, Fort Chipewyan, Fort Smith, Slave river, Fort Resolution, Hay river, Fort Simpson, Fort Providence, Fort Wrighby and Fort Good Hope, and the results obtained will be given in the next annual report.

## PHENOLOGICAL OBSERVATIONS.

In the various European countries the work of collecting and publishing phenological statistics is undertaken by the Meteorological Departments and the Canadian Service, which for some years past has also published statistics prepared by Mr. F. F. Payne, of the central office, Toronto, has undertaken to extend this work. It is hoped that it may be possible to enlist the services of the provincial boards of education as has been done in the province of Nova Scotia.

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The chief use of phenological statistics from a meteorological point of view is the graphic indication they give of the climate and the varying seasons. To those familiar with the dates of the flowering of common plants, &c., in their own district a mental picture of the climate of another district can much more readily be formed by comparing such dates than would be formed by consulting meteorological statistics.

Respectfully submitted,

R. F. STUPART,  
*Director.*

#### APPENDIX A.

METEOROLOGICAL SERVICE, ST. JOHN, OBSERVATORY,  
ST. JOHN, N.B., May, 1911.

R. F. STUPART, F.R.S.C.,  
Director, Meteorological Service,  
Toronto, Ont.

SIR,—I have the honour to present the annual report on the observatory at St. John, for the fiscal year ending March 31, 1911.

*Meteorological Service.*—The regular meteorological observations and records have been continued without interruption. No change has been made in the equipment or exposure of the instruments. The eye-reading as well as the automatic recording instruments which carry a continuous record of pressure, temperature, precipitation and direction and velocity of the wind have been maintained in most excellent condition.

*Weather Bulletins.*—The weather bulletin has been promptly issued every week day morning after receipt of the telegraphic messages from Toronto. The forecasts, synopsis and prevailing conditions at inland and coast stations is as has been in the past of inestimable value to mariners, shippers, contractors and various interests that largely depend upon the information contained therein. It is displayed in public places, distributed through the post and published by the evening press as heretofore. Through the courtesy of the New Brunswick Telephone Company, forecasts from Toronto are at six o'clock each morning telephoned to their numerous exchanges throughout this province and displayed on forms supplied by the meteorological service. At many of these places the forecasts would not otherwise be available. This most valuable and wide distribution of the forecasts is made gratuitously by the telephone company for the benefit of the public. Local and outside transportation companies, shipping and commercial houses make frequent requests for information from our records to assist in adjusting claims for demurrage, damage to perishable goods in transit, &c., in many cases the settlements wholly depend upon information from our observations and records. The press obtain much information during periods of extremes, important storms and other items of general interest to the public.

*Storm Signals.*—In addition to the hoist of storm signals at the signal station here, messages are telephoned to the display stations at St. Martins and Point Lepreaux upon receipt of the warning or safety message from Toronto.

*Time Service of the Maritime Provinces.*—Clock errors and rates have been determined by observation of standard stars almost every clear night, the observations and clock signals being recorded on the chronograph in the usual manner. The observations have mostly been made by the transit micrometer method, the instrument being furnished with a group of five fixed spider lines on each side of the centre of the field, the middle of the field is left clear for the transit or moving wire micrometer. When the selection of stars for a set would allow the necessary time interval between transits, both key and micrometer were used, the clock error then reduced



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from the double sett of from eight to twelve stars. The difference between results with key and micrometer indicate that I observe nearly three-tenths of second later with the key.

For the two minute interval ending at 10 a.m., time signals from this observatory continue to be sent over the Western Union Wires throughout these provinces. The mean time transmitting clock being connected through relay with the telegraph lines, automatically opens, sends the two minute signal and then closes the circuit.

At Camperdown, N.S., this signal is automatically repeated from the land line to wireless, and distributed to ships at sea within the zone of the Marconi station.

At other hours similar signals have been sent out by telegraph and telephone from the same clock, the beats of our clock relay being audible through long distance and local telephones.

The electric clock at Halifax has been daily sent a synchronizing signal at 10 a.m., when owing to wire trouble this signal did not go through, it has been repeated at following hours until satisfactorially received. Return signals from this clock in afternoon or evening seldom show an appreciable difference.

In Halifax watch and chronometer adjusters have sounders on their premises and wire connection with telegraph office to receive our 10 a.m. signal.

Excepting a few days last autumn when the apparatus at St. John was undergoing repairs the time balls at St. John and Halifax have been dropped each week-day at 1 p.m. of the 60th meridian.

*Clocks.*—The Riefler sidereal clock which is run under constant pressure and temperature continues to give most accurate results. While it was dismantled for cleaning last August, the Kullberg sidereal, (which is also mounted in the basement clockroom) was used as the standard.

Some additions have been made to the list of clocks which are hourly synchronized from our master clock in different parts of the city. The Bank of New Brunswick have installed an electric clock in the office of their new building at Fredericton which is synchronized every week-day morning. This is a growing and most useful service to the public.

I have the honour to be, sir,  
Your most obedient servant,

D. L. HUTCHINSON,  
*Director, St. John Observatory.*

## APPENDIX B.

QUEBEC, April, 18, 1911.

The Director, Meteorological Service,  
Toronto.

SIR,—I have the honour to transmit my annual report for the fiscal year ending March 31, 1911.

The usual meteorological observations were taken daily at this observatory and the bi-hourly temperatures continued at the Citadel; the instruments are in good order.

Inquiries by telephone respecting the weather conditions, &c., were very numerous, and statistics were often given to the newspapers and other persons.

The weather bulletin issued by the central office, Toronto, is very much appreciated by the public. It is posted every morning at the principal places of the city and published in all the newspapers.

Time observations were made nearly every fine night and also occasionally at noon. It was found that the transit instrument was much affected by frost during the cold



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season, probably because it is not on a solid base and that the wooden shed in which it is placed was not built on a stone foundation.

The time ball has been dropped in a very satisfactory manner during the whole navigation season.

As suggested in my last report, the position of the time gun was changed, but owing to complaints from residents near the Citadel it had to be removed to its former position.

I beg further to report that new water pipes were laid to the observatory during last spring and the building has now a good supply of water.

The whole respectfully submitted.

ARTHUR SMITH,  
*Director.*

Forecasts issued from the Central Office during fiscal year 1910-11.

NUMBER ISSUED AND PERCENTAGE OF VERIFICATION.

| Month.       | ALBERTA.       |               |                |             | SASKATCHEWAN. |                |               |                | MANITOBA.   |             |                |               | LAKE SUPERIOR. |             |             |                | LOWER LAKES.  |                |             |             | GEORGIAN BAY.  |               |                |             | OTTAWA VALLEY. |  |  |  |
|--------------|----------------|---------------|----------------|-------------|---------------|----------------|---------------|----------------|-------------|-------------|----------------|---------------|----------------|-------------|-------------|----------------|---------------|----------------|-------------|-------------|----------------|---------------|----------------|-------------|----------------|--|--|--|
|              | Number Issued. | Number fully. | Number partly. | Number not. | Percentage.   | Number issued. | Number fully. | Number partly. | Number not. | Percentage. | Number issued. | Number fully. | Number partly. | Number not. | Percentage. | Number issued. | Number fully. | Number partly. | Number not. | Percentage. | Number issued. | Number fully. | Number partly. | Number not. | Percentage.    |  |  |  |
| 1910.        |                |               |                |             |               |                |               |                |             |             |                |               |                |             |             |                |               |                |             |             |                |               |                |             |                |  |  |  |
| April.....   | 76             | 58            | 15             | 386.2       |               | 76             | 63            | 13             | 388.0       |             | 79             | 63            | 16             | 387.2       |             | 79             | 63            | 16             | 387.2       |             | 79             | 63            | 13             | 586.5       |                |  |  |  |
| May.....     | 83             | 64            | 14             | 582.5       |               | 83             | 73            | 88             | 73          | 9           | 688.1          | 117           | 97             | 15          | 589.3       |                | 108           | 99             | 14          | 788.4       |                | 84            | 67             | 13          | 586.5          |  |  |  |
| June.....    | 82             | 65            | 13             | 487.2       |               | 82             | 66            | 76             | 62          | 12          | 289.5          | 116           | 99             | 14          | 391.4       |                | 121           | 102            | 13          | 689.7       |                | 104           | 85             | 18          | 190.4          |  |  |  |
| July.....    | 78             | 67            | 16             | 583.3       |               | 78             | 66            | 10             | 291.0       |             | 102            | 77            | 21             | 485.8       |             | 125            | 108           | 12             | 591.2       |             | 104            | 101           | 17             | 191.3       |                |  |  |  |
| August.....  | 84             | 64            | 17             | 386.3       |               | 84             | 66            | 15             | 387.6       |             | 85             | 69            | 10             | 687.1       |             | 135            | 106           | 25             | 487.8       |             | 104            | 91            | 23             | 487.8       |                |  |  |  |
| September..  | 77             | 64            | 8              | 588.3       |               | 77             | 60            | 14             | 387.0       |             | 120            | 92            | 21             | 785.4       |             | 132            | 104           | 20             | 687.9       |             | 104            | 97            | 22             | 487.8       |                |  |  |  |
| October..... | 77             | 54            | 18             | 581.8       |               | 77             | 60            | 14             | 387.0       |             | 120            | 92            | 21             | 785.4       |             | 132            | 104           | 20             | 687.9       |             | 104            | 97            | 22             | 487.8       |                |  |  |  |
| November..   | 78             | 53            | 16             | 978.2       |               | 78             | 63            | 14             | 585.4       |             | 113            | 83            | 25             | 979.8       |             | 127            | 95            | 23             | 785.4       |             | 109            | 72            | 21             | 683.5       |                |  |  |  |
| December...  | 79             | 63            | 14             | 288.6       |               | 79             | 67            | 16             | 387.2       |             | 99             | 73            | 21             | 584.3       |             | 121            | 92            | 24             | 588.0       |             | 105            | 73            | 26             | 681.9       |                |  |  |  |
| 1911.        |                |               |                |             |               |                |               |                |             |             |                |               |                |             |             |                |               |                |             |             |                |               |                |             |                |  |  |  |
| January....  | 77             | 57            | 17             | 385.1       |               | 77             | 58            | 14             | 683.3       |             | 87             | 71            | 15             | 190.2       |             | 104            | 84            | 16             | 488.5       |             | 96             | 68            | 21             | 781.8       |                |  |  |  |
| February.... | 73             | 53            | 20             | 580.7       |               | 73             | 62            | 13             | 486.7       |             | 96             | 74            | 20             | 287.5       |             | 106            | 86            | 17             | 389.1       |             | 98             | 75            | 17             | 685.2       |                |  |  |  |
| March.....   | 81             | 64            | 15             | 288.3       |               | 82             | 69            | 10             | 390.2       |             | 94             | 77            | 14             | 389.4       |             | 110            | 89            | 17             | 488.6       |             | 104            | 78            | 16             | 1082.7      |                |  |  |  |
| Totals       | 950            | 716           | 183            | 5185.0      |               | 955            | 731           | 176            | 4885.7      |             | 1286           | 990           | 239            | 57          | 863         | 1424           | 1144          | 224            | 5688.2      |             | 1415           | 983           | 222            | 62          | 86.3           |  |  |  |

Forecasts issued from the Central Office during fiscal year 1910-11.  
NUMBER ISSUED AND PERCENTAGE OF VERIFICATION—Continued.

| Month.          | UPPER<br>ST. LAWRENCE. |               |                |             | LOWER<br>ST. LAWRENCE. |               |                |             | GULF.          |               |                |             | MARITIME WEST. |               |                |             | MARITIME EAST. |               |                |             | TOTALS.        |               |                |             |       |
|-----------------|------------------------|---------------|----------------|-------------|------------------------|---------------|----------------|-------------|----------------|---------------|----------------|-------------|----------------|---------------|----------------|-------------|----------------|---------------|----------------|-------------|----------------|---------------|----------------|-------------|-------|
|                 | Number issued.         | Number fully. | Number partly. | Percentage. | Number issued.         | Number fully. | Number partly. | Percentage. | Number issued. | Number fully. | Number partly. | Percentage. | Number issued. | Number fully. | Number partly. | Percentage. | Number issued. | Number fully. | Number partly. | Percentage. | Number issued. | Number fully. | Number partly. | Percentage. |       |
| 1910.           |                        |               |                |             |                        |               |                |             |                |               |                |             |                |               |                |             |                |               |                |             |                |               |                |             |       |
| April .....     | 85                     | 65            | 14             | 68.4        | 7                      | 107           | 88             | 18          | 289.8          | 108           | 80             | 22          | 684.3          | 107           | 82             | 20          | 588.0          | 1149          | 878            | 218         | 53.85          | 1149          | 878            | 218         | 53.85 |
| May .....       | 106                    | 85            | 20             | 189.6       | 107                    | 88            | 12             | 787.8       | 107            | 81            | 20             | 685.0       | 110            | 85            | 21             | 486.8       | 110            | 84            | 21             | 585.9       | 1252           | 1003          | 189            | 60.87       |       |
| June .....      | 113                    | 99            | 12             | 292.9       | 104                    | 85            | 78             | 4.89        | 4              | 105           | 78             | 22          | 586.7          | 117           | 83             | 31          | 3.84           | 2             | 1260           | 1027        | 189            | 41.89         | 0              |             |       |
| July .....      | 104                    | 92            | 15             | 291.3       | 116                    | 90            | 23             | 3.87        | 5              | 116           | 85             | 29          | 2.85           | 8             | 89             | 24          | 9.82           | 9             | 1279           | 1004        | 224            | 51.87         | 2              |             |       |
| August .....    | 123                    | 99            | 20             | 488.6       | 120                    | 95            | 25             | 0.89        | 6              | 124           | 95             | 27          | 2.87           | 5             | 121            | 91          | 24             | 6.85          | 1              | 181         | 1072           | 257           | 52.86          | 9           |       |
| September ..... | 117                    | 97            | 17             | 3.90        | 1                      | 119           | 93             | 15          | 11.84          | 4             | 116            | 84          | 27             | 5.84          | 0              | 117         | 81             | 27            | 9.80           | 8           | 1318           | 1026          | 224            | 68.86       |       |
| October .....   | 109                    | 80            | 23             | 683.9       | 126                    | 91            | 21             | 14.80       | 5              | 126           | 88             | 24          | 13.69          | 4             | 117            | 84          | 23             | 10.81         | 1              | 116         | 78             | 29            | 9.79           | 7           |       |
| November .....  | 104                    | 77            | 22             | 584.6       | 105                    | 74            | 23             | 8.81        | 4              | 105           | 72             | 28          | 5.81           | 9             | 113            | 74          | 30             | 9.78          | 8              | 107         | 69             | 29            | 9.77           | 6           |       |
| December .....  | 105                    | 77            | 24             | 4.80        | 5                      | 102           | 85             | 14          | 3.90           | 2             | 126            | 85          | 26             | 15.77         | 8              | 128         | 24             | 12.81         | 2              | 1251        | 933            | 261           | 67.84          | 6           |       |
| 1911.           |                        |               |                |             |                        |               |                |             |                |               |                |             |                |               |                |             |                |               |                |             |                |               |                |             |       |
| January .....   | 95                     | 71            | 19             | 584.7       | 42                     | 77            | 11             | 5.89        | 7              | 99            | 83             | 15          | 1.91           | 4             | 121            | 98          | 18             | 9.85          | 0              | 1153        | 905            | 195           | 53.86          | 9           |       |
| February .....  | 98                     | 74            | 20             | 4.85        | 7                      | 98            | 79             | 11          | 8.86           | 2             | 98             | 75          | 19             | 4.86          | 2              | 108         | 85             | 18            | 5.87           | 9           | 1151           | 891           | 206            | 54.86       |       |
| March .....     | 104                    | 82            | 14             | 8.85        | 6                      | 107           | 83             | 16          | 8.85           | 2             | 108            | 86          | 16             | 6.87          | 0              | 121         | 95             | 20            | 6.86           | 8           | 1222           | 962           | 192            | 68.86       |       |
| Totals .....    | 1268                   | 998           | 220            | 50.87       | 4                      | 1303          | 1015           | 207         | 82.85          | 8             | 1314           | 1000        | 253            | 55.85         | 9              | 1401        | 1040           | 267           | 94.83          | 8           | 14945          | 11533         | 2674           | 738.86      |       |

## NUMBER ISSUED AND PERCENTAGE OF VERIFICATION,

| Month.        | VICTORIA AND VICINITY. |               |                |             |             | LOWER MAINLAND. |               |                |             |             | KAMLOOPS.      |               |                |             |             | TOTALS.        |               |                |             |             |
|---------------|------------------------|---------------|----------------|-------------|-------------|-----------------|---------------|----------------|-------------|-------------|----------------|---------------|----------------|-------------|-------------|----------------|---------------|----------------|-------------|-------------|
|               | Number issued.         | Number fully. | Number partly. | Number not. | Percentage. | Number issued.  | Number fully. | Number partly. | Number not. | Percentage. | Number issued. | Number fully. | Number partly. | Number not. | Percentage. | Number issued. | Number fully. | Number partly. | Number not. | Percentage. |
| 1910.         |                        |               |                |             |             |                 |               |                |             |             |                |               |                |             |             |                |               |                |             |             |
| April.....    | 110                    | 80            | 5              | 25          | 75.0        | 108             | 82            | 7              | 19          | 79.2        | 98             | 82            | 5              | 11          | 86.2        | 316            | 244           | 17             | 55          | 79.9        |
| May.....      | 116                    | 89            | 6              | 21          | 79.3        | 115             | 95            | 3              | 17          | 83.9        | 107            | 91            | 1              | 15          | 85.5        | 338            | 275           | 10             | 53          | 82.8        |
| June.....     | 130                    | 96            | 19             | 24          | 77.7        | 118             | 89            | 6              | 23          | 78.0        | 118            | 94            | 3              | 23          | 80.9        | 366            | 279           | 13             | 68          | 78.8        |
| July.....     | 139                    | 125           | 5              | 9           | 91.7        | 135             | 116           | 7              | 12          | 84.5        | 129            | 118           | 1              | 10          | 91.9        | 403            | 359           | 13             | 31          | 90.7        |
| August.....   | 118                    | 96            | 12             | 10          | 86.4        | 106             | 94            | 1              | 11          | 89.1        | 103            | 88            | 0              | 15          | 85.4        | 327            | 278           | 13             | 36          | 87.0        |
| September ..  | 105                    | 80            | 8              | 17          | 80.0        | 101             | 84            | 3              | 14          | 84.6        | 91             | 80            | 0              | 11          | 87.9        | 297            | 244           | 11             | 42          | 84.2        |
| October.....  | 111                    | 77            | 10             | 24          | 73.9        | 104             | 82            | 4              | 21          | 79.3        | 90             | 76            | 0              | 14          | 84.4        | 305            | 235           | 11             | 59          | 78.9        |
| November..... | 107                    | 79            | 8              | 20          | 78.5        | 93              | 81            | 4              | 8           | 89.3        | 87             | 69            | 1              | 17          | 79.9        | 287            | 229           | 13             | 45          | 82.1        |
| December..... | 101                    | 80            | 6              | 15          | 82.2        | 94              | 74            | 2              | 18          | 79.8        | 94             | 81            | 2              | 11          | 87.2        | 289            | 235           | 10             | 44          | 83.0        |
| 1911.         |                        |               |                |             |             |                 |               |                |             |             |                |               |                |             |             |                |               |                |             |             |
| January.....  | 102                    | 83            | 8              | 11          | 85.3        | 90              | 73            | 5              | 12          | 83.9        | 104            | 76            | 1              | 27          | 73.6        | 296            | 232           | 14             | 50          | 80.8        |
| February..... | 101                    | 72            | 5              | 24          | 73.8        | 88              | 71            | 1              | 16          | 81.3        | 86             | 69            | 2              | 15          | 81.4        | 275            | 212           | 8              | 55          | 78.5        |
| March.....    | 112                    | 98            | 2              | 12          | 88.4        | 105             | 94            | 4              | 7           | 91.4        | 107            | 94            | 3              | 10          | 89.2        | 324            | 286           | 9              | 29          | 89.7        |
| Totals.....   | 1,352                  | 1,055         | 85             | 212         | 81.2        | 1,257           | 1,035         | 44             | 178         | 84.1        | 1,214          | 1,018         | 19             | 177         | 84.2        | 3,823          | 3,108         | 148            | 567         | 83.2        |



## APPENDIX No. 9.

## MARINE HOSPITAL SERVICE.

OTTAWA, May 26, 1911.

SIR,—I have the honour to submit the annual report of the transactions in the Marine Hospitals' Service, for the fiscal year ended March 31, 1911.

I have the honour to be, sir,

Your obedient servant,

C. H. GODIN, M.D.

*Medical Superintendent Marine Hospitals' Service.*

A. JOHNSTON, Esq.,

Deputy Minister of Marine and Fisheries,  
Ottawa.

ANNUAL REPORT OF THE MEDICAL SUPERINTENDENT OF MARINE  
HOSPITALS' SERVICE FOR THE FISCAL YEAR 1910-11.

|                                 |             |
|---------------------------------|-------------|
| Amount of appropriation.. . . . | \$70,000 00 |
| Amount of expenditure.. . . .   | 54,859 50   |
| Balance.. . . .                 | \$15,140 50 |

## EXPENDITURE BY PROVINCES.

| Province.                  | Number<br>of Seamen. | Number<br>of Days. | Total<br>Expenditure. |
|----------------------------|----------------------|--------------------|-----------------------|
|                            |                      |                    | \$ cts.               |
| Nova Scotia .....          | 1,528                | 12,960             | 24,687 25             |
| New Brunswick .....        | 504                  | 3,205              | 8,400 91              |
| Prince Edward Island ..... | 222                  | 1,064              | 2,825 23              |
| Quebec .....               | 559                  | 5,525              | 10,556 45             |
| British Columbia .....     | 421                  | 3,330              | 7,669 67              |
| General Account .....      |                      |                    | 719 99                |
|                            | 3,234                | 26,084             | 54,859 50             |

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TABLE showing expenditure for each Port.

*Nova Scotia.*

| Port.  | Number<br>of seamen. | Number<br>of days<br>given. | Total<br>expenditure. |
|--|----------------------|-----------------------------|-----------------------|
|  |                      |                             | \$ cts.               |
| Advocate Harbour.....                                      | 8                    | 49                          | 202 25                |
| Amherst.....   | 5                    |                             | 48 30                 |
| Annapolis Royal.....                                       | 33                   | 118                         | 210 61                |
| Apple River.....   | 4                    | 35                          | 187 00                |
| Arichat.....   | 21                   | 56                          | 320 00                |
| Baddeck.....   | 5                    |                             | 46 50                 |
| Barrington.....  | 11                   | 49                          | 321 00                |
| Barton.....  | 13                   | 627                         | 543 21                |
| Bear River.....  | 8                    | 58                          | 219 85                |
| Belliveau's Cove.....                                      | 1                    | 14                          | 5 00                  |
| Bridgetown.....  | 2                    |                             | 12 30                 |
| Bridgewater.....   | 56                   |                             | 326 41                |
| Canning.....   | 6                    |                             | 29 95                 |
| Canso.....   | 96                   | 172                         | 497 83                |
| Chester.....   | 2                    | 14                          | 68 35                 |
| Cheticamp.....   | 22                   | 13                          | 294 00                |
| Cheverie.....  | 2                    |                             | 8 90                  |
| Church Point.....  | 1                    | 14                          | 8 50                  |
| Clark's Harbour.....                                       | 29                   | 85                          | 274 28                |
| Clementsport.....  | 2                    | 112                         | 221 00                |
| Digby.....   | 29                   |                             | 300 00                |
| Freeport, Westport and Tiverton.....                       | 68                   | 836                         | 655 24                |
| Glace Bay.....   | 10                   | 11                          | 166 50                |
| Guysborough.....   | 1                    |                             | 3 40                  |
| Halifax, Victoria General Hospital.....                    | 1,172                | 4,589                       | 6,947 00              |
| Halifax Infirmary.....                                     | 1                    | 35                          | 52 50                 |
| City Board of Health.....                                  | 1                    | 15                          | 39 14                 |
| Hantsport.....   | 6                    |                             | 32 25                 |
| Ingram Port.....   | 1                    |                             | 5 00                  |
| Isaac's Harbour.....                                       | 6                    |                             | 85 50                 |
| Jeddore.....   | 2                    | 18                          | 56 00                 |
| Kingsport.....   | 2                    |                             | 13 75                 |
| La Have.....   | 4                    |                             | 66 05                 |
| Liscomb.....   | 1                    |                             | 85 00                 |
| Liverpool.....   | 7                    | 214                         | 207 00                |
| Lockport.....  | 6                    | 83                          | 130 21                |
| Louisburg.....   | 20                   | 524                         | 1,135 24              |
| Lunenburg.....   | 37                   | 936                         | 1,333 30              |
| Mabou.....   | 1                    |                             | 5 00                  |
| Mahone Bay.....  | 25                   | 59                          | 375 45                |
| Marble Mountain.....                                       | 2                    |                             | 11 00                 |
| Margaree.....  | 1                    |                             | 4 00                  |
| Meteghan.....  | 12                   | 274                         | 266 06                |
| Musquodoboit.....  | 4                    |                             | 56 50                 |
| North East Harbour.....                                    | 1                    |                             | 50 00                 |
| Northport.....   | 13                   |                             | 42 00                 |
| Parrsboro and West Bay.....                                | 49                   |                             | 300 00                |
| Pictou.....  | 68                   | 118                         | 812 00                |
| Port Clyde.....  | 1                    |                             | 20 00                 |
| Port Dufferin.....   | 2                    | 6                           | 19 70                 |
| Port Greville.....   | 13                   | 98                          | 197 50                |
| Port Hood.....   | 4                    | 21                          | 36 15                 |
| Ports Hawkesbury, Hastings, Mulgrave and Point Tupper..... | 50                   | 148                         | 471 58                |
| Port Latour.....   | 20                   |                             | 125 00                |
| Port Maitland.....   | 1                    |                             | 5 50                  |
| Port Morien.....   | 10                   |                             | 125 00                |
| Port Wade.....   | 11                   |                             | 112 00                |
| Pubnico.....   | 17                   | 17                          | 317 00                |
| North Sydney.....  | 254                  |                             | 750 00                |
| Pugwash.....   | 4                    |                             | 7 50                  |
| River Hebert.....  | 5                    |                             | 83 00                 |
| Salmon River.....  | 1                    | 49                          | 105 50                |
| Sandy Cove.....  | 16                   | 28                          | 214 00                |
| Springhill.....  | 5                    | 274                         | 249 70                |
| Sherbrooke.....  | 3                    |                             | 21 00                 |
| Shelburne.....   | 6                    | 5                           | 36 75                 |

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TABLE showing expenditure for each Port—*Continued.**Nova Scotia—Continued.*

| Port.              | Number<br>of seamen. | Number of<br>days given. | Total<br>expenditure. |
|--------------------|----------------------|--------------------------|-----------------------|
|                    |                      |                          | \$ cts.               |
| Spry Bay.....      | 1                    |                          | 30 00                 |
| St. Peters.....    | 37                   |                          | 250 00                |
| Sydney.....        | 74                   | 1775                     | 2,031 29              |
| Tuskett Wedge..... | 1                    |                          | 4 50                  |
| Wallace.....       | 1                    |                          | 3 25                  |
| Walton.....        | 1                    |                          | 25 00                 |
| Weymouth.....      | 6                    | 58                       | 165 60                |
| Windsor.....       | 27                   | 108                      | 203 75                |
| Yarmouth.....      | 83                   | 1,245                    | 1,600 05              |
| Totals.....        | 1,528                | 12,960                   | 24,687 25             |

*New Brunswick.*

|                                      |     |       |          |
|--------------------------------------|-----|-------|----------|
| Alma.....                            | 2   |       | 26 00    |
| Bathurst.....                        | 2   |       | 150 00   |
| Beaver Harbour.....                  | 1   | 39    | 44 56    |
| Buctouche.....                       | 10  | 21    | 34 75    |
| Campbellton.....                     | 22  | 47    | 452 40   |
| Cape Tormentine and Bay Verte..      | 7   |       | 150 00   |
| Caraquet.....                        | 7   |       | 44 50    |
| Dalhousie.....                       | 33  | 19    | 140 80   |
| Dorchester.....                      | 16  |       | 99 80    |
| Douglastown.....                     | 48  | 399   | 2,151 96 |
| Fredericton.....                     | 1   |       | 2 65     |
| Grand Harbour.....                   | 9   | 256   | 515 50   |
| Hillsboro & Hopewell Cape.....       | 92  |       | 150 00   |
| Moncton.....                         | 23  | 161   | 325 65   |
| North Head.....                      | 3   |       | 15 15    |
| Quaco.....                           | 3   |       | 23 90    |
| Richibucto.....                      | 6   | 11    | 206 29   |
| Riverside and Harvey.....            | 8   |       | 21 80    |
| Shediac.....                         | 16  |       | 204 90   |
| Shippegan.....                       | 2   |       | 3 25     |
| St. Andrews.....                     | 5   |       | 29 00    |
| St. Stephen.....                     | 2   |       | 9 00     |
| St. John General Hospital.....       | 183 | 2,252 | 3,339 00 |
| Wilson's Beach.....                  | 2   |       | 5 05     |
| St. Martins.....                     | 1   |       | 5 00     |
| St. John, N. B. Mission Society..... |     |       | 200 00   |
|                                      | 504 | 3,205 | 8,400 91 |

*Prince Edward Island.*

|                             |     |       |          |
|-----------------------------|-----|-------|----------|
| Alberton.....               | 6   |       | 11 45    |
| Cardigan.....               | 3   |       | 39 20    |
| Charlottetown Hospital..... | 26  | 348   | 522 00   |
| P. E. I. Hospital.....      | 15  | 544   | 816 00   |
| Crapaud.....                | 3   | 7     | 17 25    |
| French River.....           | 1   |       | 19 75    |
| Georgetown.....             | 12  |       | 56 45    |
| Montague.....               | 8   |       | 37 25    |
| Murray Harbour.....         | 16  | 11    | 154 71   |
| New London.....             | 1   |       | 6 00     |
| Rustico.....                | 1   |       | 15 00    |
| Souris.....                 | 63  | 82    | 350 43   |
| Summerside.....             | 54  |       | 250 00   |
| Tignish and Miminegash..... | 12  | 8     | 167 85   |
| Vernon River.....           | 1   | 64    | 361 89   |
|                             | 222 | 1,064 | 2,825 23 |

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TABLE showing expenditure for each Port—*Concluded.**Quebec.*

| Port.                             | Number<br>of seamen. | Number of<br>days given. | Total<br>expenditure. |      |
|-----------------------------------|----------------------|--------------------------|-----------------------|------|
|                                   |                      |                          | \$                    | cts. |
| Batiscan.....                     | 2                    |                          | 41                    | 50   |
| Bonaventure River.....            | 4                    |                          | 51                    | 50   |
| Fraserville.....                  | 7                    | 93                       | 166                   | 00   |
| Gaspé.....                        | 8                    |                          | 200                   | 00   |
| Grand River.....                  | 1                    |                          | 5                     | 50   |
| Levis.....                        | 1                    | 54                       | 81                    | 00   |
| Montreal, Alexandra Hospital..... | 5                    | 67                       | 184                   | 50   |
| Notre-Dame Hospital.....          | 127                  | 1,906                    | 2,883                 | 00   |
| General Hospital.....             | 174                  | 2,099                    | 3,222                 | 50   |
| Matane.....                       | 14                   | 35                       | 166                   | 35   |
| Magdalen Islands.....             | 5                    | 4                        | 79                    | 50   |
| New Richmond.....                 | 2                    |                          | 24                    | 50   |
| Paspébiac and New Carlisle.....   | 8                    | 50                       | 162                   | 50   |
| Percé.....                        | 1                    |                          | 2                     | 00   |
| Port Daniel.....                  | 3                    |                          | 9                     | 00   |
| Quebec, Hotel-Dieu.....           | 17                   | 92                       | 138                   | 00   |
| Jeffery Hale.....                 | 61                   | 1,106                    | 1,659                 | 00   |
| Rimouski.....                     | 6                    |                          | 30                    | 25   |
| Seven Islands.....                | 1                    |                          | 16                    | 00   |
| Sorel.....                        | 19                   |                          | 57                    | 75   |
| St. Johns.....                    | 71                   | 25                       | 622                   | 50   |
| Three Rivers.....                 | 22                   | 4                        | 353                   | 60   |
| Montreal Seamen's Institute.....  |                      |                          | 200                   | 00   |
| Catholic Sailors' Club.....       |                      |                          | 200                   | 00   |
|                                   | 559                  | 5,535                    | 10,556                | 45   |

*British Columbia.*

|                                     |     |       |       |    |
|-------------------------------------|-----|-------|-------|----|
| Chemainus.....                      | 6   | 187   | 533   | 58 |
| Ladysmith.....                      | 5   |       | 12    | 00 |
| Nanaimo.....                        | 236 | 99    | 699   | 00 |
| New Westminster.....                | 1   | 126   | 126   | 00 |
| Port Simpson.....                   | 2   | 18    | 19    | 25 |
| Prince Rupert.....                  | 1   |       | 3     | 00 |
| Union Bay and Cumberland.....       | 32  | 54    | 486   | 48 |
| Vancouver, St. Paul's Hospital..... | 81  | 1,951 | 2,926 | 50 |
| Strathcona Institute.....           |     |       | 200   | 00 |
| Victoria, Marine Hospital.....      | 153 | 832   | 2,368 | 36 |
| St. Joseph's Hospital.....          | 4   | 63    | 95    | 50 |
| Victoria Seamen's Institute.....    |     |       | 200   | 00 |
|                                     | 421 | 3,330 | 7,669 | 67 |

*General Account.*

|   |     |      |
|---|-----|------|
|   | \$  | cts. |
| Printing and stationery.....            | 277 | 91   |
| Medical Supt's travelling expenses..... | 439 | 60   |
| Express and freight charges.....        | 2   | 48   |
|   | 719 | 99   |



TABLE showing Expenditure for Treatment, Board, Supplies, &amp;c.

|   | Nova Scotia | New Brunswick. | Prince Edward Island. | Quebec.   | British Columbia. | General Account. |
|---|-------------|----------------|-----------------------|-----------|-------------------|------------------|
|   | \$ cts.     | \$ cts.        | \$ cts.               | \$ cts.   | cts.              | \$ cts.          |
| Board in hospitals and private houses.....  | 10,972 03   | 3,951 27       | 1,489 57              | 8,271 10  | 4,004 38          |                  |
| Medical and surgical treatment.....         | 3,292 45    | 695 10         | 616 05                | 489 35    | 97 50             |                  |
| Medical officers and keeper's salaries..... | 7,806 99    | 2,225 00       | 700 00                | 1,275 00  | 2,533 33          |                  |
| Fuel.....                                   | 859 00      | 36 00          |                       |           | 448 40            |                  |
| Drugs, instruments, etc....                 | 286 54      | 42 30          |                       |           | 66 32             |                  |
| Burials.....                                | 60 75       | 36 00          |                       |           |                   |                  |
| Telephone.....                              | 113 88      | 27 70          |                       |           | 66 00             |                  |
| Water.....                                  | 67 00       |                |                       |           | 31 25             |                  |
| Transportation.....                         | 94 40       | 16 30          |                       | 121 00    |                   | 439 60           |
| Repairs and maintenance..                   | 640 53      | 1,034 30       |                       |           | 10 50             |                  |
| Special nursing.....                        | 91 00       | 22 28          | 8 57                  |           |                   |                  |
| Light.....                                  |             |                |                       |           | 76 25             |                  |
| Furniture, bedding, etc....                 | 337 68      | 114 66         | 11 04                 |           | 50 74             |                  |
| Medical assistance.....                     | 65 00       |                |                       |           | 25 00             |                  |
| Grants.....                                 |             | 200 00         |                       | 400 00    | 400 00            |                  |
| Printing and stationery....                 |             |                |                       |           |                   | 277 91           |
| Express and freight charges                 |             |                |                       |           |                   | 2 48             |
|   | \$24,687 25 | 8,400 91       | 2,825 23              | 10,556 45 | 37 669 67         | 719 99           |

TABLE showing Amount of Salaries Paid to Medical Officers and Keepers During the Fiscal Year 1910-11.

| Nova Scotia.                    | \$ cts.  | Nova Scotia—Continued.                                 | \$ cts.  |
|---------------------------------|----------|--|----------|
| Annapolis Royal—                |          | Parrsboro and West Bay—                                |          |
| Medical officer.....            | \$160 00 | Medical officer.....                                   | 300 00   |
| Arichat—                        |          | Pictou—  |          |
| Medical officer.....            | 300 00   | Medical officer.....                                   | 400 00   |
| Barrington—                     |          | Keeper.....  | 200 00   |
| Medical officer.....            | 300 00   | Ports Hastings, Hawkesbury, Mulgrave and Point Tupper— |          |
| Bear River—                     |          | Medical Officer.....                                   | 175 83   |
| Medical officer.....            | 150 00   | Keeper.....  | 72 00    |
| Bridgewater—                    |          | Port Greville—   |          |
| Medical officer.....            | 29 16    | Medical Officer.....                                   | 150 00   |
| Canso—                          |          | Port Latour—   |          |
| Medical officer.....            | 375 00   | Medical Officer.....                                   | 125 00   |
| Clark's Harbour—                |          | Port Morien—   |          |
| Medical officer.....            | 250 00   | Medical Officer.....                                   | 125 00   |
| Digby—                          |          | Sandy Cove—  |          |
| Medical officer.....            | 250 00   | Medical Officer.....                                   | 200 00   |
| Keeper.....                     | 50 00    | St. Peters, L'Ardoise and River Bourgeois—             |          |
| Freeport, Westport & Tiverton,— |          | Medical Officer.....                                   | 250 00   |
| Medical officer.....            | 300 00   | Sydney—  |          |
| Glace Bay—                      |          | Medical Officer.....                                   | 500 00   |
| Medical officer.....            | 150 00   | Keeper.....  | 300 00   |
| Liverpool—                      |          | Weymouth—  |          |
| Medical officer.....            | 100 00   | Medical Officer.....                                   | 125 00   |
| Lockport—                       |          | Windsor—   |          |
| Medical officer.....            | 100 00   | Medical Officer.....                                   | 120 00   |
| Louisburg—                      |          | Yarmouth—  |          |
| Medical officer.....            | 250 00   | Medical Officer.....                                   | 400 00   |
| Keeper.....                     | 300 00   |  |          |
| Lunenburg—                      |          |  |          |
| Medical officer.....            | 400 00   |  |          |
| Keeper.....                     | 150 00   |  |          |
| North Sydney—                   |          |  |          |
| Medical officer.....            | 750 00   |  |          |
|                                 |          |  | 7,806 99 |

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TABLE showing Amount of Salaries Paid to Medical Officers and Keepers During the Fiscal Year 1910-11—*Continued.*

| <i>New Brunswick.</i>        |          | <i>Quebec.</i>                |           |
|------------------------------|----------|-------------------------------|-----------|
|                              | \$ cts.  |                               | \$ cts.   |
| Bathurst—                    |          | Gaspe—                        |           |
| Medical Officer .....        | 150 00   | Medical Officer .....         | 200 00    |
| Campbellton—                 |          | Paspebiac and New Carlisle—   |           |
| Medical Officer .....        | 350 00   | Medical Officer .....         | 125 00    |
| Cape Tormentine—             |          | St. Johns—                    |           |
| Medical Officer .....        | 150 00   | Medical Officer .....         | 600 00    |
| Dalhousie—                   |          | Three Rivers—                 |           |
| Medical Officer .....        | 125 00   | Medical Officer .....         | 350 00    |
| Douglastown—                 |          |                               | 1,275 00  |
| Medical Officer .....        | 450 00   |                               |           |
| Keeper .....                 | 250 00   | <i>British Columbia.</i>      |           |
| Hillsboro and Hopewell Cape— |          | Chemainus—                    |           |
| Medical Officer .....        | 150 00   | Medical Officer .....         | 400 00    |
| Moncton—                     |          | Nanaimo—                      |           |
| Medical Officer .....        | 200 00   | Medical Officer .....         | 600 00    |
| Richibucto—                  |          | Union Bay—                    |           |
| Medical Officer .....        | 200 00   | Medical Officer .....         | 333 33    |
| Shediac—                     |          | Victoria—                     |           |
| Medical Officer .....        | 200 00   | Medical Officer .....         | 600 00    |
|                              | 2,225 00 | Keeper .....                  | 600 00    |
| <i>Prince Edward Island.</i> |          |                               | 2,533 33  |
| Murray Harbour—              |          | Total amount of salaries paid |           |
| Medical Officer .....        | 150 00   | during 1910-11.. .....        | 14,540 32 |
| Souris—                      |          |                               |           |
| Medical Officer .....        | 300 00   |                               |           |
| Summerside—                  |          |                               |           |
| Medical Officer .....        | 250 00   |                               |           |
|                              | 700 00   |                               |           |

TABLE showing Expenditure for Treatment, comprising Doctors' Services, Doctors' Travelling Expenses, Drugs and Board.

*Nova Scotia.*

| Ports.                               | Physician's Services. | Physician's Travelling Expenses. | Drugs.  | Board.  | Total Expenditure |
|--------------------------------------|-----------------------|----------------------------------|---------|---------|-------------------|
|                                      | \$ cts.               | \$ cts.                          | \$ cts. | \$ cts. | \$ cts.           |
| Advocate Harbour.....                | 67 00                 | 58 00                            | 46 00   | 24 00   | 195 00            |
| Amherst.....                         | 32 00                 | 12 00                            | 4 30    |         | 48 30             |
| Annapolis Royal.....                 |                       |                                  |         | 50 61   | 50 61             |
| Apple River .....                    | 131 00                |                                  | 14 00   | 37 00   | 182 00            |
| Arichat .....                        |                       |                                  |         | 20 00   | 20 00             |
| Baddeck .....                        | 5 00                  | 31 00                            | 10 50   |         | 46 50             |
| Barrington.....                      |                       |                                  |         | 31 00   | 31 00             |
| Barton.....                          | 118 00                | 92 00                            | 65 80   | 265 66  | 541 46            |
| Bear River .....                     | 14 00                 | 28 00                            | 3 00    | 21 85   | 69 85             |
| Belliveau's Cove.....                |                       |                                  |         | 5 00    | 5 00              |
| Bridgetown.....                      | 8 00                  |                                  | 4 30    |         | 12 30             |
| Bridgewater.....                     | 173 00                |                                  | 124 25  |         | 297 25            |
| Canning.....                         | 13 00                 |                                  | 6 95    |         | 19 95             |
| Canso.....                           |                       |                                  |         | 122 83  | 122 83            |
| Chester .....                        | 17 00                 | 25 00                            | 4 85    | 14 00   | 60 85             |
| Cheticamp.....                       | 107 00                | 97 50                            | 67 00   | 22 50   | 294 00            |
| Cheverie.....                        | 2 00                  | 6 00                             | 90      |         | 8 90              |
| Church Point.....                    | 1 00                  | 1 00                             | 1 50    | 5 00    | 8 50              |
| Clark's Harbour.....                 |                       |                                  |         | 24 28   | 24 28             |
| Clementsport.....                    | 50 00                 | 100 00                           | 3 00    | 48 00   | 201 00            |
| Freeport, Westport and Tiverton..... |                       |                                  |         | 355 24  | 355 24            |
| Glace Bay .....                      |                       |                                  |         | 16 50   | 16 50             |
| Guy'sboro .....                      | 2 50                  |                                  | 90      |         | 3 40              |

TABLE showing Expenditure for Treatment, comprising Doctors' Services, Doctors' Travelling Expenses, Drugs and Board—*Continued.*

*Nova Scotia—Continued.*

| Ports.   | Physicians' Services. |      | Doctors' Travelling Expenses. |      | Drugs. |      | Board.   |      | Total Expenditure. |      |
|--|-----------------------|------|-------------------------------|------|--------|------|----------|------|--------------------|------|
|  | \$                    | cts. | \$                            | cts. | \$     | cts. | \$       | cts. | \$                 | cts. |
| Halifax, Victoria Hospital .....                           |                       |      |                               |      |        |      | 6,883 50 |      | 6,883 50           |      |
| Halifax Infirmary .....                                    |                       |      |                               |      |        |      | 52 50    |      | 52 50              |      |
| City Board Health .....                                    |                       |      |                               |      |        |      | 39 14    |      | 39 14              |      |
| Hantsport .....  | 16                    | 00   |                               |      | 16     | 25   |          |      | 32                 | 25   |
| Ingram Port .....  | 4                     | 00   |                               |      | 1      | 00   |          |      | 5                  | 00   |
| Isaac's Harbour .....                                      | 55                    | 00   | 18                            | 00   | 12     | 50   |          |      | 85                 | 50   |
| Jeddore .....  | 1                     | 00   | 9                             | 00   | 1      | 00   | 45       | 00   | 56                 | 00   |
| Kingsport .....  | 11                    | 00   |                               |      | 2      | 75   |          |      | 13                 | 75   |
| La Have .....  | 45                    | 00   | 17                            | 00   | 4      | 05   |          |      | 65                 | 05   |
| Liscomb .....  | 9                     | 00   | 63                            | 00   | 4      | 00   | 9        | 00   | 85                 | 00   |
| Liverpool .....  |                       |      |                               |      |        |      | 107      | 00   | 107                | 00   |
| Lockport .....   |                       |      |                               |      |        |      | 30       | 21   | 30                 | 21   |
| Louisburg .....  |                       |      |                               |      |        |      | 104      | 60   | 104                | 60   |
| Lunenburg .....  |                       |      |                               |      |        |      | 468      | 00   | 468                | 00   |
| Mabou .....  | 1                     | 00   | 4                             | 00   |        |      |          |      | 5                  | 00   |
| Mahone Bay .....   | 228                   | 75   | 72                            | 00   | 37     | 00   | 37       | 70   | 375                | 45   |
| Marble Mountain .....                                      | 10                    | 00   |                               |      | 1      | 00   |          |      | 11                 | 00   |
| Margaree .....   | 2                     | 00   | 1                             | 00   | 1      | 00   |          |      | 4                  | 00   |
| Meteghan .....   | 108                   | 50   |                               |      | 53     | 50   | 104      | 06   | 266                | 06   |
| Musquodoboit .....   | 8                     | 00   | 39                            | 50   | 9      | 00   |          |      | 56                 | 50   |
| North East Harbour .....                                   | 9                     | 00   | 36                            | 00   | 5      | 00   |          |      | 50                 | 00   |
| Northport .....  | 27                    | 50   |                               |      | 14     | 50   |          |      | 42                 | 00   |
| Pictou .....   |                       |      |                               |      |        |      | 69       | 00   | 69                 | 00   |
| Port Clyde .....   | 18                    | 00   |                               |      | 2      | 00   |          |      | 20                 | 00   |
| Port Dufferin .....  | 7                     | 00   |                               |      | 2      | 00   | 7        | 50   | 16                 | 50   |
| Port Greville .....  |                       |      |                               |      |        |      | 47       | 50   | 47                 | 50   |
| Port Hood .....  | 18                    | 00   |                               |      | 3      | 15   | 15       | 00   | 36                 | 15   |
| Port Hastings, Hawkesbury, Mulgrave and Point Tupper ..... | 20                    | 00   | 13                            | 00   | 11     | 50   | 87       | 00   | 131                | 50   |
| Port Maitland .....  | 5                     | 00   |                               |      | 50     |      |          |      | 5                  | 50   |
| Port Wade .....  | 19                    | 00   | 61                            | 00   | 32     | 00   |          |      | 112                | 00   |
| Pubnico .....  | 144                   | 75   | 129                           | 00   | 30     | 25   | 13       | 00   | 317                | 00   |
| Pugwash .....  | 6                     | 00   |                               |      | 1      | 50   |          |      | 7                  | 50   |
| River Hebert .....   | 16                    | 00   | 35                            | 00   | 32     | 00   |          |      | 83                 | 00   |
| Salmon River .....   | 16                    | 00   | 64                            | 00   | 4      | 50   | 21       | 00   | 105                | 50   |
| Sandy Cove .....   |                       |      |                               |      |        |      | 14       | 00   | 14                 | 00   |
| Springhill .....   |                       |      |                               |      |        |      | 246      | 60   | 246                | 60   |
| Sherbrooke .....   | 11                    | 00   | 2                             | 50   | 7      | 50   |          |      | 21                 | 00   |
| Shelburne .....  | 6                     | 50   | 4                             | 00   | 1      | 00   | 6        | 25   | 17                 | 75   |
| Spry Bay .....   | 20                    | 00   |                               |      | 10     | 00   |          |      | 30                 | 00   |
| Sydney .....   |                       |      |                               |      |        |      | 772      | 00   | 772                | 00   |
| Tusket Wedge .....   | 3                     | 00   |                               |      | 1      | 50   |          |      | 4                  | 50   |
| Wallace .....  | 3                     | 00   |                               |      | 0      | 25   |          |      | 3                  | 25   |
| Walton .....   | 20                    | 00   |                               |      | 5      | 00   |          |      | 25                 | 00   |
| Weymouth .....   |                       |      |                               |      |        |      | 29       | 75   | 29                 | 75   |
| Windsor .....  |                       |      |                               |      |        |      | 83       | 75   | 83                 | 75   |
| Yarmouth .....   |                       |      |                               |      |        |      | 622      | 50   | 622                | 50   |
|  | 1,609                 | 50   | 1,018                         | 50   | 664    | 45   | 10,972   | 03   | 14,264             | 68   |

*New Brunswick*

|                      |    |    |     |    |    |    |     |    |     |    |
|----------------------|----|----|-----|----|----|----|-----|----|-----|----|
| Alma .....           | 2  | 00 | 18  | 00 | 6  | 00 |     |    | 26  | 00 |
| Beaver Harbour ..... |    |    |     |    |    |    | 22  | 28 | 22  | 28 |
| Buctouche .....      | 16 | 00 |     |    | 8  | 25 | 10  | 50 | 34  | 75 |
| Campbellton .....    | 58 | 00 | 5   | 50 | 3  | 75 | 23  | 50 | 90  | 75 |
| Caraquet .....       | 26 | 50 |     |    | 18 | 00 |     |    | 44  | 50 |
| Dorchester .....     | 77 | 50 |     |    | 22 | 30 |     |    | 99  | 80 |
| Douglastown .....    |    |    |     |    |    |    | 199 | 50 | 199 | 50 |
| Fredericton .....    | 2  | 00 |     |    | 0  | 65 |     |    | 2   | 65 |
| Grand Harbour .....  | 80 | 00 | 212 | 00 | 26 | 50 | 197 | 00 | 515 | 50 |

## SESSIONAL PAPER No. 21

TABLE showing Expenditure for Treatment, comprising Doctors' Services, Doctors' Travelling Expenses, Drugs and Board—*Continued.*

*New Brunswick—Continued.*

| Ports.                         | Physicians' Services. | Physicians' Travelling Expenses. | Drugs.  | Board.   | Total Expenditure. |
|--------------------------------|-----------------------|----------------------------------|---------|----------|--------------------|
|                                | \$ cts.               | \$ cts.                          | \$ cts. | \$ cts.  | \$ cts.            |
| Moncton .....                  |                       |                                  |         | 98 40    | 98 40              |
| North Head .....               | 5 00                  | 7 00                             | 315 00  |          | 15 50              |
| Quaco .....                    | 23 00                 |                                  | 1 90    |          | 23 90              |
| Richibucto.....                |                       |                                  |         | 6 29     | 6 29               |
| Riverside and Harvey.....      | 11 00                 | 5 00                             | 5 80    |          | 21 80              |
| Shippegan.....                 | 2 00                  | 1 25                             |         |          | 3 25               |
| St. Andrews .....              | 21 00                 |                                  | 8 00    |          | 29 00              |
| St. Martins .....              | 5 00                  |                                  |         |          | 5 00               |
| St. Stephen.....               | 8 00                  |                                  | 1 00    |          | 9 00               |
| St. John General Hospital..... |                       |                                  |         | 3,378 00 | 3,378 00           |
| Wilson's Beach.....            | 2 00                  |                                  | 3 05    |          | 5 05               |
|                                | 338 00                | 247 50                           | 109 60  | 3,951 27 | 4,646 37           |

*Prince Edward Island.*

|                             |        |       |        |          |          |
|-----------------------------|--------|-------|--------|----------|----------|
| Alberton.....               | 7 00   |       | 4 45   |          | 11 45    |
| Cardigan.....               | 26 00  | 2 00  | 11 20  |          | 39 20    |
| Charlottetown Hospital..... |        |       |        | 522 00   | 522 00   |
| P. E. I. Hospital.....      |        |       |        | 816 00   | 816 00   |
| Crapaud.....                | 7 00   | 2 50  | 2 75   | 5 00     | 17 25    |
| French River.....           | 8 00   | 10 00 | 1 75   |          | 19 75    |
| Montague.....               | 25 00  | 4 00  | 8 25   |          | 37 25    |
| Georgetown.....             | 33 00  |       | 23 45  |          | 56 45    |
| Murray Harbour.....         |        |       |        | 4 71     | 4 71     |
| New London.....             | 5 00   |       | 1 00   |          | 6 00     |
| Rustico.....                | 13 50  |       | 1 50   |          | 15 00    |
| Souris.....                 |        |       |        | 41 86    | 41 86    |
| Tignish and Miminegash..... | 121 00 |       | 42 85  | 4 00     | 167 85   |
| Vernon River.....           | 243 00 |       | 11 85  | 96 00    | 350 85   |
|                             | 288 50 | 18 50 | 109 05 | 1,489 57 | 2,105 62 |

*Quebec.*

|                                  |        |        |        |          |          |
|----------------------------------|--------|--------|--------|----------|----------|
| Batiscan .....                   | 24 00  | 12 00  | 5 50   |          | 41 50    |
| Bonaventure River .....          | 38 00  | 8 50   | 5 00   |          | 51 50    |
| Fraserville.....                 | 63 75  | 3 00   | 6 25   | 93 00    | 166 00   |
| Grand River .....                | 3 00   |        |        | 2 50     | 5 50     |
| Levis.....                       |        |        |        | 81 00    | 81 00    |
| Montreal Alexandra Hospital..... |        |        |        | 169 50   | 169 50   |
| Notre Dame Hospital .....        |        |        |        | 2,859 00 | 2,859 05 |
| General Hospital.....            |        |        |        | 3,148 50 | 3,148 00 |
| Matane.....                      | 41 00  | 37 00  | 34 85  | 53 50    | 166 35   |
| Magdalen Islands.....            | 9 00   | 52 00  | 12 50  | 6 00     | 79 50    |
| New Richmond.....                | 14 00  |        | 10 50  |          | 24 50    |
| Paspébiac and New Carlisle ..... |        |        |        | 37 50    | 37 50    |
| Perce.....                       | 1 00   |        | 1 00   |          | 2 00     |
| Port Daniel.....                 | 4 50   |        | 4 50   |          | 9 00     |
| Quebec Hotel Dieu.....           |        |        |        | 138 00   | 138 00   |
| Jeffery Hale.....                |        |        |        | 1,659 00 | 1,659 00 |
| Rimouski.....                    | 9 00   |        | 13 25  |          | 22 25    |
| Seven Islands .....              | 1 00   | 5 00   | 10 00  |          | 16 00    |
| Sorel.....                       | 32 00  |        | 25 75  |          | 57 75    |
| St. Johns .....                  |        |        |        | 22 50    | 22 50    |
| Three Rivers .....               |        |        |        | 3 60     | 3 60     |
|                                  | 240 25 | 117 50 | 131 60 | 8,271 10 | 8,760 45 |



2 GEORGE V., A. 1912

TABLE showing Expenditure for Treatment, comprising Doctors' Services, Doctors' Travelling Expenses, Drugs and Board—*Continued.**British Columbia.*

| Ports.                               | Physicians' Services. | Doctors' Travelling Expenses. | Drugs.  | Board.   | Total Expenditure. |
|--------------------------------------|-----------------------|-------------------------------|---------|----------|--------------------|
|                                      | \$ cts.               | \$ cts.                       | \$ cts. | \$ cts.  | \$ cts.            |
| Chemainus .....                      |                       |                               |         | 133 58   | 133 58             |
| Ladysmith .....                      |                       |                               | 12 00   |          | 12 00              |
| Nanaimo .....                        |                       |                               |         | 99 00    | 99 00              |
| New Westminster .....                |                       |                               |         | 126 00   | 126 00             |
| Port Simpson .....                   | 6 00                  |                               | 50      | 12 75    | 19 25              |
| Prince Rupert .....                  | 2 00                  |                               | 1 00    |          | 3 00               |
| Union Bay .....                      | 45 00                 | 21 00                         | 10 00   | 77 15    | 153 15             |
| Vancouver St. Paul's Hospital .....  |                       |                               |         | 2,926 50 | 2,926 50           |
| Victoria Marine Hospital .....       |                       |                               |         | 593 90   | 593 90             |
| Victoria St. Joseph's Hospital ..... |                       |                               |         | 95 50    | 95 50              |
|                                      | 53 00                 | 21 00                         | 23 50   | 4,064 38 | 4,161 88           |

## DETAILED EXPENDITURE FOR FUEL.

*Nova Scotia—*

|                                     |                |
|-------------------------------------|----------------|
| Louisburg Marine Hospital.. . . . . | \$263 64       |
| Lunenburg Marine Hospital.. . . . . | 175 95         |
| Pictou Marine Hospital.. . . . .    | 19 00          |
| Sydney Marine Hospital.. . . . .    | 212 25         |
| Yarmouth Marine Hospital.. . . . .  | 188 16         |
|                                     | <hr/> \$859 00 |

*New Brunswick—*

|                                       |       |
|---------------------------------------|-------|
| Douglastown Marine Hospital.. . . . . | 36 00 |
|---------------------------------------|-------|

*British Columbia—*

|                                    |        |
|------------------------------------|--------|
| Victoria Marine Hospital.. . . . . | 248 40 |
|------------------------------------|--------|

Total expenditure for fuel.. . . . . \$1,143 40

## DETAILED EXPENDITURE FOR WATER SUPPLY.

*Nova Scotia—*

|                                  |               |
|----------------------------------|---------------|
| Pictou Marine Hospital.. . . . . | \$50 00       |
| Sydney Marine Hospital.. . . . . | 17 00         |
|                                  | <hr/> \$67 00 |

*British Columbia—*

|                                    |       |
|------------------------------------|-------|
| Victoria Marine Hospital.. . . . . | 31 25 |
|------------------------------------|-------|

Total expenditure for water.. . . . . \$98 25

## DETAILED EXPENDITURE FOR TELEPHONE SERVICE.

*Nova Scotia—*

|                                     |                |
|-------------------------------------|----------------|
| Lunenburg Marine Hospital.. . . . . | 27 00          |
| Sydney Marine Hospital.. . . . .    | 51 88          |
| Yarmouth Marine Hospital.. . . . .  | 35 00          |
|                                     | <hr/> \$113 88 |

## SESSIONAL PAPER No. 21

DETAILED EXPENDITURE FOR TELEPHONE SERVICE—*Continued.**New Brunswick—*

|                                     |          |
|-------------------------------------|----------|
| Douglastown Marine Hospital.. . . . | \$ 27 70 |
|-------------------------------------|----------|

*British Columbia—*

|                                  |       |
|----------------------------------|-------|
| Victoria Marine Hospital.. . . . | 66 00 |
|----------------------------------|-------|

|   |          |
|---|----------|
| Total expenditure for telephone.. . . . | \$207 58 |
|---|----------|

## DETAILED EXPENDITURE FOR REPAIRS AND MAINTENANCE.

*Nova Scotia—*

|                                   |          |
|-----------------------------------|----------|
| Louisburg Marine Hospital.. . . . | \$296 80 |
|-----------------------------------|----------|

|                                   |       |
|-----------------------------------|-------|
| Lunenburg Marine Hospital.. . . . | 81 55 |
|-----------------------------------|-------|

|                                |       |
|--------------------------------|-------|
| Pictou Marine Hospital.. . . . | 59 00 |
|--------------------------------|-------|

|                                |       |
|--------------------------------|-------|
| Sydney Marine Hospital.. . . . | 65 18 |
|--------------------------------|-------|

|                                  |        |
|----------------------------------|--------|
| Yarmouth Marine Hospital.. . . . | 138 00 |
|----------------------------------|--------|

|  |          |
|--|----------|
|  | \$640 53 |
|--|----------|

*British Columbia—*

|                                  |       |
|----------------------------------|-------|
| Victoria Marine Hospital.. . . . | 10 50 |
|----------------------------------|-------|

*New Brunswick—*

|                                     |          |
|-------------------------------------|----------|
| Douglastown Marine Hospital.. . . . | 1,034 30 |
|-------------------------------------|----------|

|                           |            |
|---------------------------|------------|
| Total expenditure.. . . . | \$1,685 33 |
|---------------------------|------------|

## DETAILED EXPENDITURE FOR DRUGS, INSTRUMENTS AND OTHER SUPPLIES.

*Nova Scotia—*

|                                   |          |
|-----------------------------------|----------|
| Louisburg Marine Hospital.. . . . | \$ 39 84 |
|-----------------------------------|----------|

|                                |       |
|--------------------------------|-------|
| Sydney Marine Hospital.. . . . | 72 44 |
|--------------------------------|-------|

|                                  |        |
|----------------------------------|--------|
| Yarmouth Marine Hospital.. . . . | 101 76 |
|----------------------------------|--------|

|                                      |       |
|--------------------------------------|-------|
| Point Tupper Marine Hospital.. . . . | 72 50 |
|--------------------------------------|-------|

|  |          |
|--|----------|
|  | \$286 54 |
|--|----------|

*New Brunswick—*

|                                     |       |
|-------------------------------------|-------|
| Douglastown Marine Hospital.. . . . | 42 30 |
|-------------------------------------|-------|

*British Columbia—*

|                                  |       |
|----------------------------------|-------|
| Victoria Marine Hospital.. . . . | 66 32 |
|----------------------------------|-------|

|                           |          |
|---------------------------|----------|
| Total expenditure.. . . . | \$395 16 |
|---------------------------|----------|

## GRANT TO SEAMEN'S SOCIETIES.

|                                     |           |
|-------------------------------------|-----------|
| Montreal Sailors' Institute.. . . . | \$ 200 00 |
|-------------------------------------|-----------|

|   |        |
|---|--------|
| Montreal Catholic Sailors' Club.. . . . | 200 00 |
|---|--------|

|   |        |
|---|--------|
| St. John, N.B., Mission Society.. . . . | 200 00 |
|---|--------|

|  |        |
|--|--------|
| Victoria, B.C., Seamen's Institute.. . . . | 200 00 |
|--|--------|

|  |        |
|--|--------|
| Vancouver-Strathcona Institute.. . . . | 200 00 |
|--|--------|

|                     |            |
|---------------------|------------|
| Total grant.. . . . | \$1,000 00 |
|---------------------|------------|

## DETAILED EXPENDITURE FOR LIGHT.

*British Columbia—*

|                                  |         |
|----------------------------------|---------|
| Victoria Marine Hospital.. . . . | \$76 25 |
|----------------------------------|---------|

## DETAILED EXPENDITURE FOR LIGHT.

*Nova Scotia—*

|                          |         |          |
|--------------------------|---------|----------|
| Advocate Harbour.. . . . | \$ 7 25 |          |
| Apple River.. . . .      | 5 00    |          |
| Barton.. . . .           | 1 75    |          |
| Chester.. . . .          | 7 50    |          |
| Halifax.. . . .          | 47 50   |          |
| Louisburg.. . . .        | 1 95    |          |
| Lunenburg.. . . .        | 2 30    |          |
| Port Dufferin.. . . .    | 3 30    |          |
| Shelburne.. . . .        | 4 00    |          |
| Springhill.. . . .       | 3 10    |          |
| Weymouth.. . . .         | 10 85   |          |
|                          | <hr/>   | \$ 94 40 |

*New Brunswick—*

|                     |         |          |
|---------------------|---------|----------|
| Campbellton.. . . . | \$ 9 15 |          |
| Moncton.. . . .     | 2 25    |          |
| Shediac.. . . .     | 4 90    |          |
|                     | <hr/>   | \$ 16 30 |

*Quebec—*

|                                       |          |           |
|---------------------------------------|----------|-----------|
| Alexandria Hospital, Montreal.. . . . | \$ 15 00 |           |
| Notre Dame Hospital, Montreal.. . . . | 24 00    |           |
| General Hospital, Montreal.. . . .    | 74 00    |           |
| Rimouski.. . . .                      | 8 00     |           |
|                                       | <hr/>    | \$ 121 00 |

Medical superintendent's travelling expenses.. . . . 439 60

Total expenditure for transportation.. . . . \$ 671 30

## DETAILED EXPENDITURE FOR SPECIAL NURSING.

*Nova Scotia—*

|                      |         |          |
|----------------------|---------|----------|
| Clementsport.. . . . | \$20 00 |          |
| Louisburg.. . . .    | 71 00   |          |
|                      | <hr/>   | \$ 91 00 |

*New Brunswick—*

Beaver Harbour.. . . . 22 28

*Prince Edward Island—*

Souris.. . . . 8 57

Total expenditure for nursing.. . . . \$ 121 85

## DETAILED EXPENDITURES FOR BURIALS.

*Nova Scotia—*

|                      |         |          |
|----------------------|---------|----------|
| Canning.. . . .      | \$10 00 |          |
| Halifax.. . . .      | 16 00   |          |
| Point Tupper.. . . . | 19 75   |          |
| Shelburne.. . . .    | 15 00   |          |
|                      | <hr/>   | \$ 60 75 |

*New Brunswick—*

|                  |         |       |
|------------------|---------|-------|
| Moncton.. . . .  | \$25 00 |       |
| St. John.. . . . | 11 00   |       |
|                  | <hr/>   | 36 00 |

Total expenditure for burials.. . . . \$ 96 75

## SESSIONAL PAPER No. 21

## DETAILED EXPENDITURE FOR FURNITURE, BEDDING, ETC.

*Nova Scotia—*

|                   |           |                 |
|-------------------|-----------|-----------------|
| Louisburg.. . . . | \$ 153 41 |                 |
| Lunenburg.. . . . | 29 10     |                 |
| Sydney.. . . .    | 40 54     |                 |
| Yarmouth.. . . .  | 114 63    |                 |
|                   |           | <hr/> \$ 337 68 |

*New Brunswick—*

|                     |         |              |
|---------------------|---------|--------------|
| Campbellton.. . . . | \$ 2 50 |              |
| Douglastown.. . . . | 112 16  |              |
|                     |         | <hr/> 114 66 |

*Prince Edward Island—*

|                      |       |  |
|----------------------|-------|--|
| Vernon River.. . . . | 11 04 |  |
|----------------------|-------|--|

*British Columbia—*

|                                  |       |  |
|----------------------------------|-------|--|
| Victoria Marine Hospital.. . . . | 50 74 |  |
|----------------------------------|-------|--|

Total expenditure.. . . . \$ 514 12

## DETAILED EXPENDITURE FOR MEDICAL ASSISTANCE.

*Nova Scotia—*

|                   |         |                |
|-------------------|---------|----------------|
| Louisburg.. . . . | \$50 00 |                |
| Pictou.. . . .    | 15 00   |                |
|                   |         | <hr/> \$ 65 00 |

*British Columbia—*

|                                  |       |  |
|----------------------------------|-------|--|
| Victoria Marine Hospital.. . . . | 25 00 |  |
|----------------------------------|-------|--|

Total expenditure for medical assistance.. . . \$ 90 00

## MISCELLANEOUS.

|                                     |          |       |
|-------------------------------------|----------|-------|
| Printing and stationery.. . . .     | \$277 91 |       |
| Express and freight charges.. . . . | 2 48     |       |
|                                     |          | <hr/> |
| Total expenditure.. . . .           | \$280 39 |       |

## TOTAL NUMBER OF VOUCHERS FOR EACH PROVINCE.

|                              |     |
|------------------------------|-----|
| Nova Scotia.. . . .          | 625 |
| New Brunswick.. . . .        | 134 |
| Prince Edward Island.. . . . | 79  |
| British Columbia.. . . .     | 120 |
| Quebec.. . . .               | 89  |
| General account.. . . .      | 21  |



2 GEORGE V., A. 1912

TABULAR STATEMENT showing diseases for which seamen received treatment during  
1910-11.

General diseases, 809.

|   |     |
|---|-----|
| Measles.. . . . .                                   | 17  |
| Scarlet fever.. . . . .                             | 5   |
| Influenza.. . . . .                                 | 110 |
| Mumps.. . . . .                                     | 3   |
| Dyphtheria.. . . . .                                | 2   |
| Enteric fever.. . . . .                             | 45  |
| Choleric-diarrhoea.. . . . .                        | 7   |
| Dysentery.. . . . .                                 | 36  |
| Beriberi.. . . . .                                  | 1   |
| Malarial fever . . . . .                            | 42  |
| Erysipelas.. . . . .                                | 18  |
| Septicimia.. . . . .                                | 66  |
| Tyaemia.. . . . .                                   | 2   |
| Tetanus.. . . . .                                   | 2   |
| Tubercle . . . . .                                  | 35  |
| Syphilis.. . . . .                                  | 51  |
| Gonorrhoea.. . . . .                                | 104 |
| Scabies . . . . .                                   | 17  |
| Toenia.. . . . .                                    | 2   |
| Alcoholism.. . . . .                                | 7   |
| Rheumatism.. . . . .                                | 176 |
| Gout.. . . . .                                      | 1   |
| Anemia.. . . . .                                    | 12  |
| Diabetes mellitus.. . . . .                         | 7   |
| Congenital malformation.. . . . .                   | 2   |
| General debility.. . . . .                          | 21  |
| New growth, non-malignant.. . . . .                 | 4   |
| New growth, malignant.. . . . .                     | 6   |
| Effects of inorganic poison.. . . . .               | 3   |
| Effects of heat.. . . . .                           | 1   |
| Cyst.. . . . .                                      | 2   |
| Effects of the presence of foreign bodies.. . . . . | 2   |

Local diseases, 1,875.

Diseases of the nervous system, 87.

1. Of the nerves—

|                             |   |
|-----------------------------|---|
| Neuritis.. . . . .          | 8 |
| Multiple neuritis.. . . . . | 6 |

2. Of the spinal cord and membranes.—

|                                       |   |
|---------------------------------------|---|
| Inflammation.. . . . .                | 2 |
| Degeneration lateral column.. . . . . | 1 |
| Locomotor-ataxia.. . . . .            | 3 |

Of brain and membranes.—

|                      |   |
|----------------------|---|
| Hemorrhage.. . . . . | 1 |
| Meningitis.. . . . . | 3 |

4. Functional nervous diseases and other diseases of undetermined nature—

|                     |   |
|---------------------|---|
| Apoplexy.. . . . .  | 2 |
| Paralysis.. . . . . | 6 |

## SESSIONAL PAPER No. 21

TABULAR Statement showing diseases for which seamen received treatment during  
1910-11—*Continued.*

Diseases of the nervous system, 87—*Continued.*4. Functional nervous diseases, &c.—*Continued.*

|                      |    |
|----------------------|----|
| Epilepsy.. . . .     | 6  |
| Spasm.. . . .        | 1  |
| Vertigo.. . . .      | 4  |
| Headache.. . . .     | 3  |
| Neurasthenia.. . . . | 4  |
| Neuralgia.. . . .    | 35 |
| Hysteria.. . . .     | 2  |

## Diseases of the eye, 64.

|                                 |    |
|---------------------------------|----|
| Conjunctivitis.. . . .          | 30 |
| Keratitis.. . . .               | 3  |
| Ulceration of cornea.. . . .    | 3  |
| Iritis.. . . .                  | 11 |
| Blepharitis.. . . .             | 3  |
| Abscess of eyelid.. . . .       | 2  |
| Abscess of lacrymal sac.. . . . | 2  |
| Echymosis of eyelid.. . . .     | 6  |
| Optic neuritis.. . . .          | 1  |
| Amblyopia.. . . .               | 1  |
| Squint.. . . .                  | 2  |

## Diseases of the ear, 51.

|   |    |
|---|----|
| Inflammation of external meatus.. . . . | 2  |
| Cerumen.. . . .                         | 1  |
| Inflammation of the middle ear.. . . .  | 46 |
| Abscess axilla.. . . .                  | 2  |

## Diseases of the nose, 8.

|  |   |
|--|---|
| Inflammation of septum.. . . .           | 1 |
| Necrosis of septum.. . . .               | 1 |
| Inflammation of sinuses.. . . .          | 1 |
| Inflammation of the naso-pharynx.. . . . | 5 |

## Diseases of the circulatory system, 58.

|                               |    |
|-------------------------------|----|
| Pericarditis.. . . .          | 12 |
| Endocarditis.. . . .          | 9  |
| Valvular diseases.. . . .     | 13 |
| Aneurism of the heart.. . . . | 1  |
| Angina-pectoris.. . . .       | 3  |
| Syncope.. . . .               | 1  |
| Arteritis.. . . .             | 4  |
| Aneurism of arteries.. . . .  | 5  |
| Thrombosis.. . . .            | 2  |
| Phlebitis.. . . .             | 2  |
| Varix.. . . .                 | 6  |

2 GEORGE V., A. 1912

TABULAR STATEMENT showing diseases for which seamen received treatment during  
1910-11—*Continued.*

Diseases of the respiratory system, 428.

|                             |     |
|-----------------------------|-----|
| Laryngitis.. . . .          | 32  |
| Bronchitis.. . . .          | 227 |
| Spasmodic asthma.. . . .    | 29  |
| Congestion of lungs.. . . . | 5   |
| Hemorrhage of lungs.. . . . | 5   |
| Pneumonia.. . . .           | 42  |
| Broncho-pneumonia.. . . .   | 6   |
| Abscess of lung.. . . .     | 4   |
| Thypsis.. . . .             | 32  |
| Pleurisy.. . . .            | 44  |
| Oedema of lungs.. . . .     | 2   |

Diseases of the digestive system, 576.

|   |    |
|---|----|
| Inflammation of the lips.. . . .          | 2  |
| Inflammation of the mouth.. . . .         | 3  |
| Abscess of dental periosteum.. . . .      | 12 |
| Toothache.. . . .                         | 42 |
| Necrosis alveoli.. . . .                  | 7  |
| Sore throat.. . . .                       | 10 |
| Inflammation of tonsils.. . . .           | 46 |
| Post-pharyngeal abscess.. . . .           | 3  |
| Inflammation of the stomach.. . . .       | 61 |
| Ulceration of the stomach.. . . .         | 8  |
| Hemorrhage of the stomach.. . . .         | 2  |
| Indigestion.. . . .                       | 68 |
| Gastralagia.. . . .                       | 2  |
| Anorexia.. . . .                          | 2  |
| Inflammation of the intestines.. . . .    | 19 |
| Typhlitis.. . . .                         | 6  |
| Colitis.. . . .                           | 11 |
| Appendicitis.. . . .                      | 24 |
| Duodenitis.. . . .                        | 1  |
| Intestinal obstruction.. . . .            | 5  |
| Constipation.. . . .                      | 22 |
| Diarrhoea.. . . .                         | 55 |
| Fistula in ano.. . . .                    | 6  |
| Prolapsus of rectum.. . . .               | 1  |
| Ulcer of rectum.. . . .                   | 2  |
| Piles.. . . .                             | 28 |
| Inflammation of the liver.. . . .         | 17 |
| Jaundice.. . . .                          | 8  |
| Cancer of the liver.. . . .               | 2  |
| Calculi.. . . .                           | 2  |
| Biliary colic.. . . .                     | 2  |
| Hernia.. . . .                            | 32 |
| Inflammation of the biliary ducts.. . . . | 7  |
| Peritonitis.. . . .                       | 3  |
| Dyspepsia.. . . .                         | 53 |
| Dropsy.. . . .                            | 2  |

## SESSIONAL PAPER No. 21

TABULAR STATEMENT showing diseases for which seamen received treatment during 1910-11—*Continued.*

## Diseases of the lymphatic system, 44.

|                    |    |
|--------------------|----|
| Adenitis.. . . . . | 41 |
| Goitre.. . . . .   | 3  |

## Diseases of the urinary system, 82.

|                                 |    |
|---------------------------------|----|
| Nephritis.. . . . .             | 20 |
| Bright's disease.. . . . .      | 18 |
| Calculi of kidney.. . . . .     | 2  |
| Abscess perinephritis.. . . . . | 1  |
| Calculi in ureter.. . . . .     | 1  |
| Haemapuria.. . . . .            | 1  |
| Albuminnuria.. . . . .          | 2  |
| Lithuria.. . . . .              | 1  |
| Phosphaturia.. . . . .          | 1  |
| Pyelitis.. . . . .              | 3  |
| Cystitis.. . . . .              | 32 |

## Diseases of the generative system, 121.

|  |    |
|--|----|
| Urethritis.. . . . .                         | 15 |
| Stricture.. . . . .                          | 16 |
| Inflammation of the prostate.. . . . .       | 5  |
| Phimosis.. . . . .                           | 4  |
| Paraphimosis.. . . . .                       | 2  |
| Inflammation of the glands.. . . . .         | 6  |
| Soft chancres.. . . . .                      | 20 |
| Orchitis.. . . . .                           | 31 |
| Inflammation of the spermatic cord.. . . . . | 7  |
| Varicocele.. . . . .                         | 10 |
| Epididymitis.. . . . .                       | 4  |
| Spermatorrhea.. . . . .                      | 1  |

## Diseases of the organs of locomotion, 101.

|                                      |   |
|--------------------------------------|---|
| Inflammation of the bones—           |   |
| Osteitis.. . . . .                   | 3 |
| Periostitis.. . . . .                | 4 |
| Caries.. . . . .                     | 2 |
| Inflammation of the joints.. . . . . | 9 |
| Dislocation of ankle.. . . . .       | 1 |
| Dislocation of spine.. . . . .       | 1 |
| Necrosis.. . . . .                   | 5 |

## Myalgia—

|                    |    |
|--------------------|----|
| Lumbago.. . . . .  | 57 |
| Sciatica.. . . . . | 15 |
| Bursitis.. . . . . | 4  |

## Diseases of the connective tissues, 83.

|                      |    |
|----------------------|----|
| Cellulitis.. . . . . | 21 |
| Abscesses.. . . . .  | 58 |
| Gangrene.. . . . .   | 3  |
| Oedema.. . . . .     | 1  |



2 GEORGE V., A. 1912

TABULAR STATEMENT showing diseases for which seamen received treatment during  
1910-11—*Continued.*

Diseases of the skin, 171.

|                            |    |
|----------------------------|----|
| Erythema.. . . . .         | 6  |
| Pityriasis rosea.. . . . . | 1  |
| Urticaria.. . . . .        | 5  |
| Eczema.. . . . .           | 40 |
| Impetigo.. . . . .         | 5  |
| Prurigo.. . . . .          | 1  |
| Psoriasis.. . . . .        | 2  |
| Herpes.. . . . .           | 5  |
| Dermatitis.. . . . .       | 1  |
| Acne.. . . . .             | 1  |
| Seborrhoea.. . . . .       | 1  |
| Chilblains.. . . . .       | 2  |
| Ulcers.. . . . .           | 29 |
| Boils.. . . . .            | 39 |
| Carbuncles.. . . . .       | 21 |
| Whitlow.. . . . .          | 1  |
| Pruritus.. . . . .         | 2  |
| Ring worm.. . . . .        | 1  |
| Frost bite.. . . . .       | 8  |

Injuries, 550.

General injuries, 34.

|                             |    |
|-----------------------------|----|
| Burns and scalds.. . . . .  | 30 |
| Multiple injuries.. . . . . | 2  |
| Shock.. . . . .             | 2  |

Local injuries, 516.

|  |    |
|--|----|
| Rupture of muscle.. . . . .              | 2  |
| Wounds of muscles.. . . . .              | 15 |
| Fracture of skull.. . . . .              | 8  |
| Concussion of brain.. . . . .            | 2  |
| Contusion eyelids.. . . . .              | 10 |
| Wound of eyelid.. . . . .                | 5  |
| Wound of neck.. . . . .                  | 15 |
| Wound of chest.. . . . .                 | 24 |
| Contusion of chest.. . . . .             | 31 |
| Fracture of ribs.. . . . .               | 21 |
| Sprain of back.. . . . .                 | 7  |
| Wound of back.. . . . .                  | 2  |
| Contusion of abdomen.. . . . .           | 4  |
| Contusion of upper extremities.. . . . . | 27 |
| Sprain of shoulders.. . . . .            | 5  |
| Sprain of elbow.. . . . .                | 1  |
| Sprain of wrist.. . . . .                | 15 |
| Sprain of hand.. . . . .                 | 2  |
| Wound of upper extremities.. . . . .     | 37 |
| Fracture of clavicle.. . . . .           | 6  |
| Fracture of humerus.. . . . .            | 20 |
| Fracture of radius.. . . . .             | 10 |

## SESSIONAL PAPER No. 21

TABULAR STATEMENT showing diseases for which seamen received treatment during  
1910-11—*Concluded*.

Local injuries—*Continued*.

|  |    |
|--|----|
| Fracture ulna.. . . .                      | 1  |
| Fracture of radius and ulna.. . . .        | 5  |
| Fracture of finger bones.. . . .           | 12 |
| Dislocation of shoulder.. . . .            | 7  |
| Dislocation of phalanges and thumb.. . . . | 9  |
| Contusion lower extremities.. . . .        | 75 |
| Sprained hip.. . . .                       | 7  |
| Sprained knee.. . . .                      | 5  |
| Sprained ankle.. . . .                     | 38 |
| Sprained foot.. . . .                      | 12 |
| Fracture femur.. . . .                     | 11 |
| Fracture tibia.. . . .                     | 10 |
| Fracture of fibula.. . . .                 | 5  |
| Fracture of tibia and fibula.. . . .       | 2  |
| Fracture of spine.. . . .                  | 1  |
| Fracture of pelvis.. . . .                 | 2  |
| Fracture of bone of nose.. . . .           | 2  |
| Fracture lower maxillary.. . . .           | 2  |
| Fracture patella.. . . .                   | 10 |
| Fracture of bones of foot.. . . .          | 11 |
| Malingery.. . . .                          | 18 |

Incomplete reports, 10.

Total number of Seamen treated, 3,234.

## APPENDIX No. 10.

## EXAMINATION OF MASTERS AND MATES.

OTTAWA, May 11, 1911.

ALEXANDER JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to place before you the annual report in connection with Masters' and Mates' examinations throughout Canada.

There are at present thirteen offices where examinations are held; as the Windsor office is now closed on account of Captain McGregor having resigned lately from the position of examiner there, the remainder are as follows:—Victoria, B.C., Captain Gaudin; Vancouver, B.C., Captain Eddie; Yarmouth, N.S., Captain Murphy; Lunenburg, N.S., Captain Wolff; North Sydney, N.S., Captain Sutherland; Charlottetown, P.E.I., Captain Cameron; Halifax, N.S., Captain Lugar, where examinations for all grades of certificates are held, which comprise foreign going, coastwise and also all local examinations, Nelson, B. C., Captain Hallett; Edmonton, Alberta, Captain Grant; West Selkirk, Man., Captain Thordarsen; Collingwood, Ont., Captain Coles; Toronto, Ont., Captain Moller; Windsor (now closed), Captain McGregor; Montreal, Captain Riley, where examinations for local certificates only are carried out.

It will be noted that 464 examinations were held for the various grades of certificates, 364 candidates having passed and 100 failed, and for sight test only 8 men coming up for that very necessary examination, but on the whole, there is a slight increase on last year's showing.

I have the honour to be, sir,  
Your obedient servant,

H. ST. G. LINDSAY,  
*Chief Examiner.*

## APPENDIX No. 11.

## MARINE SCHOOLS.

OTTAWA, May 11, 1911.

ALEXANDER JOHNSTON, ESQ.,

Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to submit the annual report of attendance at lectures given at the Marine Schools established at the various ports of the Dominion under the supervision of the Marine and Fisheries Department. There have been seven schools where lectures were delivered during the winter, the local attendance being 2,685, not taking into account the lectures which were given by the late Captain Toye, lecturer for the department, at Montreal, Quebec, Three-Rivers and Sorel, a complete record of which has not been procured owing to his sudden death, but during the three months in which he lectured the attendance was reported to be very fair at all the above places, with the exception of Montreal where no support was given.

There is a slight increase over last year's showing in the numbers of attendance, but on the whole I think it has been disappointing, and the only school where attendance has been at all satisfactory is the one at Vancouver, where seamen and others seem to appreciate the benefits these schools mean to them in their profession. No change has been made in the programme of tuition at any of these schools this year.

The attached statement will show the number of lectures given, the minimum, maximum average and total attendance at each school.

I have the honour to be, sir,  
Your obedient servant,

H. ST. G. LINDSAY,  
*Chief Examiner and Superintendent of Marine Schools.*

| Schools.                 | Lectures. | Minimum. | Maximum | Average. | Total. |
|--------------------------|-----------|----------|---------|----------|--------|
| Halifax, N. S. ....      | 32        | 2        | 24      | 7·8      | 249    |
| Yarmouth, N. S. ....     | 30        | 6        | 12      | 8·7      | 260    |
| Collingwood, Ont. ....   | 29        | 5        | 16      | 10·2     | 296    |
| Midland, Ont. ....       | 13        |          |         | ·9       | 120    |
| Victoria, B. C. ....     | 35        | 9        | 28      | 18·4     | 645    |
| North Sydney, N. S. .... | 32        | 3        | 9       | 5·7      | 182    |
| Vancouver, B. C. ....    | 34        | 16       | 38      | 24·5     | 933    |
| Total. ....              | 205       | 41       | 127     | 84·3     | 2,685  |



## APPENDIX No. 12.

REPORT OF THE CHAIRMAN OF THE BOARD OF STEAMBOAT  
INSPECTION.

CHAIRMAN'S OFFICE, OTTAWA, June, 1911.

To the Deputy Minister of Marine and Fisheries,  
Ottawa.

SIR,—I have the honour to submit the annual report of the Steamboat Inspection Service of the fiscal year ending March 31, 1911.

It contains the work of the service during the time stated, giving the names and number of steamboats inspected in the several divisions and their gross tonnage, with the amount of dues collected from steamers employed in the carriage of passengers between Canadian ports but registered elsewhere than in Canada, and the amount of fees received for engineer examinations, with the names of the candidates and their grade of certificate.

In addition to the steamboats inspected, the inspection of ship's tackle and hoisting gear used for the loading and unloading of vessels was made at the following ports:—Halifax, 237, St. John 191, Montreal 888.

NUMBER of steam vessels reported as known by the inspectors of steamboats in the Dominion for the year ending March 31, 1911, also the number of steamers inspected but not registered in the Dominion for the same date.

| Division.                               | Number<br>of Dominion<br>registered<br>steamers. | Gross tonnage<br>of Dominion<br>registered<br>steamers. | Number<br>of steamers<br>inspected<br>but not<br>registered<br>in the<br>Dominion. | Gross tonnage<br>of steamers<br>inspected<br>but not<br>registered<br>in the<br>Dominion. |
|---|--|---|--|---|
| Toronto .....                           | 377  | 115,586   | 55   | 70,777  |
| Collingwood .....                       | 166  | 66,876  | 8  | 12,409  |
| Kingston .....                          | 184  | 34,396  | 14   | 6,988   |
| Montreal .....                          | 226  | 25,429  | 2  | 2,384   |
| Sorel .....                             | 106  | 39,674  |  |   |
| Quebec .....                            | 121  | 27,759  | 3  | 3,715   |
| Nova Scotia .....                       | 183  | 41,476  | 22   | 40,777  |
| New Brunswick and Prince Edward Island. | 151  | 29,405  | 7  | 14,258  |
| Vancouver and Yukon .....               | 215  | 29,717  | 9  | 9,585   |
| Victoria, B. C. ....                    | 151  | 60,151  | 32   | 42,068  |
| Manitoba and North West Provinces. .... | 188  | 15,952  | 7  | 10,869  |
| Total .....                             | 2,069  | 486,421   | 159  | 213,830   |

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NUMBER of Dominion registered steamers inspected and their gross tonnage, with amount of fees collected on account of steamboat inspection during the year ended March 31, 1911.

| Division.                                   | Number of Dominion registered steamers inspected. | Gross tonnage of Dominion registered steamers inspected. | Amount of fees collected on account of Steamboat Inspection. |
|---|---|--|--|
|   |   |  | \$ cts.  |
| Toronto.....                                | 330   | 113,383  | 138 40   |
| Collingwood.....                            | 137   | 65,121   | 45 68  |
| Kingston.....                               | 172   | 33,648   | .....  |
| Montreal.....                               | 200   | 23,481   | 30 40  |
| Sorel.....                                  | 99  | 36,497   | .....  |
| Quebec.....                                 | 117   | 26,951   | 297 20   |
| Nova Scotia.....                            | 160   | 39,287   | 2,732 40   |
| New Brunswick and Prince Edward Island..... | 135   | 27,754   | .....  |
| Vancouver, B. C.....                        | 188   | 28,689   | 501 60   |
| Victoria and Yukon.....                     | 146   | 58,505   | 679 52   |
| Manitoba and North West Provinces.....      | 128   | 13,483   | .....  |
| Engineer's Certificates.....                |   |  | 1,501 50   |
| Total.....                                  | 1,812   | 466,799  | 3,944 70   |

## BOARD MEETINGS.

Owing to the increase of work at British Columbia it was found necessary to appoint another Boiler and Machinery Inspector at the Port of Vancouver, B.C., for which a Board meeting was convened to examine candidates for the position. Mr. Alfred E. Hopper having passed a satisfactory examination was appointed by Order-in-Council of October 14, 1910.

On January 18, 1911, a meeting of the Board was convened in the Chairman's office at Ottawa to consider a grievance relating to a boiler built for the SS. *Champion*, and to fix the working pressure therefor. The Board decided that owing to the form of boiler whereby a portion of the shell, externally, was exposed to the direct action of the fire, it could not be rated under Part 1 of the rules; also that any type of boiler where externally fired, a greater thickness of plate in shell than one-half inch should not be countenanced.

PROSECUTIONS AND PENALTIES ENFORCED FOR VIOLATIONS OF PART VII OF THE CANADA SHIPPING ACT, STEAMBOAT INSPECTION.

On August 18, 1910, a complaint was laid by the steamboat inspector that the owner of the SS. *Niska* of Toronto, persisted in carrying passengers in defiance of the law. Instructions were issued to take legal action to inflict the penalty for so doing when three charges were laid, one for carrying passengers without a license, one for running the boat before certificate had been issued, and one for employing an engineer without a certificate, for which fines were imposed of \$100 in the first charge, and \$50 each in the other two cases, amounting in all to \$200, for which a cheque was received by the department on October 20, 1910.

## CASUALTIES.

The following are the casualties reported from the several divisions during the year ended March 31, 1911.

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*Toronto Division.*

On May 17, 1910, the crank shaft of SS. *Midland Prince* broke while the steamer was on Saginaw bay. The engines were worked compound to Detroit, Mich., where a new shaft was installed.

On September 14, 1910, while the steamer *Kingston* was abreast of the Main Ducks Lake Ontario, the starboard shaft broke. The steamer returned to Kingston under one paddle and was afterwards towed to Toronto, a new shaft being fitted during the winter.

On September 15, 1910, the steam yachts *Tokolo* and *Ossso* were totally destroyed by fire at Beaumaris, Muskoka. The fire started in a boathouse on the wharf where the steamers were lying and reached them before they could be removed to safety.

On September 16, 1910, the tug *Pilot* was totally destroyed by fire at Blackstone bay near Parry Sound. The cause of fire was unknown.

On November 25, 1910, the tug *W. C. Francis* was totally destroyed by fire at Rondeau harbour, Lake Erie. Cause of fire unknown.

On November 26, 1910, the steamer *Alaska* was totally destroyed by fire at Tobermory harbour. Cause of fire is unknown.

On December 6, 1910, the SS. *Duncelin* ran ashore on Isle Royale, Lake Superior. She was released and taken to Port Arthur and is being repaired at that port.

On December 10, 1910, the tug *Jean* while lying at her winter quarters at Amherstburg, was burned to the water's edge. The cause of fire is unknown.

On March 26, 1910, the steamer *Cataract* was partially destroyed by fire at Brockville, Ont. The steamer was being fitted out for this season's work and the cause of fire is reported to be unknown.

*Collingwood Division.*

April 25, 1910.—The tug *Kate* of Sault Ste. Marie was totally destroyed by fire at the north end of Sault Ste. Marie canal, Ont. Cause of fire unknown. No casualties.

November 6, 1910.—The steamer *Wasaga* of Collingwood while lying in shelter at Copper harbour, Mich., was totally destroyed by fire. Cause of fire unknown. No casualties.

November 25, 1910.—The tug *Saucy Jim* of Collingwood was totally destroyed by fire while lying at Christian island. Cause of fire unknown. No casualties.

November 30, 1910.—The SS. *Athabasca* of Montreal, upward bound near Lime island, Sault Ste. Marie river, at 3.40 a.m. collided with the United States tug *General*, which resulted in sinking of the tug and the drowning of three of her crew. The SS. *Athabasca* suffered no apparent injury.

*Kingston Division.*

April 11, 1910.—The steamer *D. D. Calvin* of Kingston while lying in winter quarters was destroyed by fire. No fatalities occurred. The machinery has since been removed from the hull.

August 11, 1910.—The steamer *America* of Kingston, on her trip to the Thousand Islands broke her low pressure cylinder cover. No fatalities occurred.

November 12, 1910.—At 12.30 a.m., the SS. *Belleville* of Montreal, when on her trip between Montreal and Hamilton ran aground on Lake Ontario at a point opposite Grafton, tearing a large hole in her bottom on starboard side. No fatalities. The vessel was taken to the Kingston dry dock, repaired and put in sea-worthy condition.

*Montreal Division.*

October 17, 1910.—The steamer *G. H. Notter* of Ottawa, 14 gross tons, was totally destroyed by fire while lying at the Lachine wharf. Cause of fire unknown. No casualties.



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*Quebec Division.*

Casualty returns, nil.

*Nova Scotia Division.*

March 24, 1911, at 4.40 a.m., the SS. *Bruce* of St. John's, Newfoundland, plying in Canadian waters in the carriage of passengers and certificated by the Canadian inspectors for that purpose, grounded at Cape Breton, N.S., becoming a total loss. During the launching of the lifeboats one of the crew was lost. A preliminary investigation was held by the department as to the cause of the accident, which was found to be due to an error of judgment by the master in charge.

*New Brunswick and Prince Edward Island Division.*

July 26, 1910.—SS. *Aurora* of Lunenburg, while on her trip from St. John to Grand Manan, N.B., broke the piston rod of the low pressure cylinder, carrying away the cylinder cover also. The vessel proceeded to St. John with one cylinder where repairs were made.

October 4, 1910.—While towing a scow from Sand point in the channel between the breakwater and Partridge island, the steering gear of the tug *Help* of Liverpool, N.S., became disabled. There was a high wind and heavy sea running and she was driven ashore on the outside of breakwater and became a total loss. No fatalities.

January 14, 1911.—The ferry steamer *E. Ross* of St. John, N.B., plying between Indiantown and Pleasant point fractured the thrust shaft, which was repaired, and on the 17th, the tail shaft was fractured and repaired. These fractures were caused by the wheel coming in contact with drift wood in the river.

*Manitoba and Northwest Provinces.*

June 28, 1910.—Steamer *Majestic* of Winnipeg, 135 gross tons, while lying at her dock at Gash point, Rainy lake, was totally destroyed by fire which started about midnight at the back end of the boiler. Cause of fire unaccounted for. No fatalities.

September 22, 1910.—Steamer *Kaministiquia* of Port Arthur, 106 gross tons, while lying at a dock in the harbour during the night caught fire and was totally destroyed. Cause of fire unknown. No fatalities.

*British Columbia and Yukon Division.*

May 27, 1910.—SS. *Kaslo* of Victoria, 765 gross tons, on a trip from Nelson to Kaslo while making a landing at Ainsworth during a gale, was driven on top of submerged piling, receiving extensive damage. She was eventually lifted and hauled out on ways. It has not yet been decided if the vessel will ever be repaired. No fatalities.

July 15, 1910.—SS. *Charlotte* of Victoria, 317 gross tons, on a trip from Fort George, Upper Fraser river, was carried by strong current on to rocks, whereby a large hole was pierced on port side. The vessel was beached, and since has had machinery and boiler taken out. Hull abandoned. No fatalities.

August 5, 1910.—SS. *Princess May* of Vancouver, 1,717 gross tons, on a voyage from Skagway to Victoria, at 1.55 a.m. struck on north end of Sentinel island, Lynn canal, Alaska, and remained. All passengers, mail, and baggage safely landed and forwarded to destination on September 10. She was hauled off, towed to Victoria, and placed on Marine ways. Damage very extensive. Vessel will again be put in sea-worthy condition.

September 28, 1910.—SS. *Allion* of Victoria, 88 gross tons, on a voyage to Sechart inlet stranded off Boulder reef, Malaspina straits, and remained. During a gale on October 2, vessel broke up. Machinery and boiler saved.



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September 25, 1910.—SS. *Fern* while lying anchored at Tongue point, Northwest bay, and all hands ashore, took fire and became a total loss.

September 8, 1910.—The tug *Fraser* of Vancouver when on a trip down the Fraser river caught fire. Hull a total loss. Boiler and machinery saved. No lives lost.

September 17, 1910.—SS. *Belcarra* of Vancouver, 253 gross tons, when on her trip from Vancouver to Ladysmith stranded on the rocks in Agamemnon channel. Her stern was afloat, and as the tide dropped, she slid off and sank in deep water. Total loss. No fatalities.

March 24, 1911.—SS. *Sechelt* of Vancouver, 105 gross tons, on her trip from Victoria to Sooke, west coast, at 5 p.m. foundered in a gale. All on board were drowned, to the number of nine passengers and six of a crew. The department has authorized an investigation in order to obtain the fullest information pertaining thereto.

I am, sir, your obedient servant,

E. ADAMS,  
*Chairman Board of Steamboat Inspection.*

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## APPENDIX No. 13.

REPORT OF THE GENERAL SUPERINTENDENT OF PILOTAGE FOR  
CANADA.

OTTAWA, May 18, 1911.

ALEXANDER JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to submit the annual report respecting the Pilotage Corporations of Montreal and Quebec. The statements of other pilotage authorities which I have the honour to supervise will be found in Supplement No. 1 to the Annual Report. The authorities are as follows:—

|                                       |                              |
|---------------------------------------|------------------------------|
| Pilotage Authority of Vancouver, B.C. |                              |
| "                                     | New Westminster, B.C.        |
| "                                     | Nanaimo, B.C.                |
| "                                     | Victoria and Esquimalt, B.C. |
| "                                     | St. John, N.B.               |
| "                                     | Shediac, N.B.                |
| "                                     | Miramichi, N.B.              |
| "                                     | Richibucto, N.B.             |
| "                                     | Halifax, N.S.                |
| "                                     | Northport-Tidnish, N.S.      |
| "                                     | Restigouche, N.S.            |
| "                                     | Pugwash, N.S.                |
| "                                     | Pictou, N.S.                 |
| "                                     | Ste. Anns, N.S.              |
| "                                     | Sydney, N.S.                 |
| "                                     | Parrsboro, N.S.              |
| "                                     | Louisburg, N.S.              |
| "                                     | Buctouche, N.S.              |

A detailed statement of the doings and earnings of Montreal and Quebec pilotage is herewith attached.

As in the past, I presided over the annual examinations of pilots of both Quebec and Montreal Corporations, and am pleased to report that not a single case of defect in the sight was found among the number of pilots examined. As heretofore, the Holgrem's method of test has been followed. In Quebec, Doctor Pagé assisted me and, in Montreal, Dr. Duhamel took the notes at the examination of each individual.

Seven apprentice pilots were examined in Quebec, five being accepted and added on the ranks. In Montreal, five apprentice pilots were examined and three of them accepted. One apprentice having finished his time and, being the senior, was promoted to the position of pilot.

I have the honour to be, sir,  
Your obedient servant,

L. A. DEMERS,  
*General Superintendent of Pilotage.*

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## REPORT, CORPORATION OF PILOTS FOR AND ABOVE THE HARBOUR OF QUEBEC, 1910.

|  |          |            |
|--|----------|------------|
| Number of pilots.....  |          | 50         |
|  | In       | Out        |
| Number of trips to Montreal.....   | 825      | 776        |
| Number of trips to intermediate points.....  | 57       | 57         |
| Total number of trips.....   | 882      | 833        |
| Total earnings to Montreal.....  | \$78,370 | 88         |
| Total earnings to intermediate ports.....  | 3,497    | 95         |
| Grand total.....   | \$81,868 | 83         |
| Total earnings of Tour-de-Rôle pilots.....   | 11,526   | 46         |
| Number of trips made by selected apprentice pilots with branch<br>pilots on ocean steamers, during the year..... |          | 372        |
| Number of apprentice pilots for and above harbour of<br>Quebec.....  |          | 24         |
| Pensioners and total amount paid to widows—  |          |            |
| Pensioners.....  |          | 34         |
| Total amount paid.....   |          | \$1,771 29 |

Number of vessels reported in office, tonnage, crews and number of passengers  
inward, 1910:—

|                                      |           |
|--------------------------------------|-----------|
| Sea-going vessels.....               | 719       |
| Lake steamers.....                   | 310       |
| Schooners.....                       | 34        |
| Barges, tugs and steam yachts.....   | 12        |
| Total.....                           | 1,075     |
| Total tonnage of these vessels.....  | 2,562,876 |
| The number of masters and crews..... | 60,891    |
| Number of passengers inward.....     | 78,405    |

From 1906 to 1910—

- 11 pilots were pensioned, having attained the age limit.
- 1 dismissed.
- 1 resigned.

L. A. DEMERS,

*General Superintendent of Pilotage*

OTTAWA, March 31, 1911.

## REPORT, CORPORATION OF PILOTS FOR AND BELOW THE HARBOUR OF QUEBEC, 1910.

State of fund—

|                                 |              |
|---------------------------------|--------------|
| Money lent.....                 | \$92,800 00  |
| Money in saving department..... | 8,600 00     |
| Money in hand.....              | 62 54        |
| Arrears due.....                | 30 00        |
| Total.....                      | \$101,432 54 |

Branch pilots for and below the harbour of Quebec for 1910—

|                                      |       |
|--------------------------------------|-------|
| Number of pilots on active list..... | 84    |
| Pilotage effected.....               | 1,841 |
| Pilots to be pensioned.....          | 6     |
| Number of apprentice pilots.....     | 14    |

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Statement of monies paid and received by the Corporation of Pilots of Quebec in connection with the fund for invalid pilots, during 1910, will be found in Supplement No. 1 to the report, "Harbour Commissioners."

|  |              |
|--|--------------|
| Pilotage earnings from 762 British vessels.. . . . | \$125,062 28 |
| Pilotage earnings from 47 foreign vessels.. . . .  | 5,165 86     |

|  |              |
|--|--------------|
| Making a total of.. . . .                                | \$130,228 14 |
| Total expenses, including 7% in decayed pilot fund.. . . | 23,224 19    |

|                 |              |
|-----------------|--------------|
| Leaving.. . . . | \$107,003 95 |
|-----------------|--------------|

Which has given a dividend to each pilot of \$1,325.

L. A. DEMERS,  
*General Superintendent of Pilotage.*

OTTAWA, March 31, 1911.



## APPENDIX No. 14.

## REPORT OF THE WRECK COMMISSIONER.

OTTAWA, May 18, 1911.

ALEXANDER JOHNSTON, Esq.,  
Deputy Minister of Marine and Fisheries,  
Ottawa, Ont.

SIR,—I have the honour to submit to you a list of the wrecks and casualties which occurred in the Canadian waters during the fiscal year of 1910-11.

All the cases have been dealt with either by preliminary or formal investigations, with the exception of the following:—

SS. *Princess May*, SS. *Belcarra*, SS. *St. Denis*, which vessels met with disaster on the coast of British Columbia, also the SS. *John Irwin*, schooners *Midnight* and *Lila D. Young*, SS. *General Wolfe* and SS. *Ocamo* and *Yarmouth*.

The reason these cases have not been dealt with completely during the past fiscal year is that the department intended to make some changes in the status concerning the conduct of investigations into wrecks. These cases are now being dealt with as promptly as possible.

Preliminary inquiries have been conducted by Captain Eddie in Vancouver, Captain Lugar in Halifax and Captain Riley in the province of Quebec and the lakes.

I have the honour to be, sir,  
Your obedient servant,

L. A. DEMERS,  
Wreck Commissioner.

SESSIONAL PAPER No. 21

ANNUAL Reports of Wrecks and Casualties which occurred to Canadian and Foreign Vessels in Canadian Waters during 1910.

| Date of casualty. | Name of ship.                              | Registered port.    | Where casualty happened.  | Investigation.  |
|-------------------|--|---------------------|---|---|
| June 28...        | Aotea . . . . .                            |                     | Stranded south shore River St. Lawrence, place called Claude River. | Prel. and formal inv. by Capt. Demers.                              |
| June 1...         | Borghild.....                              | Norway.....         | Struck Castor Ledge, N.S.   | Prel. investig. by Capt. Murphy.                                    |
| May 31...         | Ben Cruachan . . . . .                     |                     | Grounded inside of Port Nova, N.S.                                  | Prel. inv. by Capt. Sutherland, formal, by Capt. Lugar.             |
| May 18...         | Beluga & Zaidee . . . . .                  |                     | Collided in Sydney Harbour.   | Prel. and formal inv. by Capt. Lugar.                               |
| Sept. 17...       | Belcarra.....                              |                     | Stranded in Agamennon Channel, B.C.                                 | Prel. inv. by Capt. Eddie   |
| Feb. 7...         | Centreville.....                           |                     | Stranded at Trout Cove, N.S.  | Prel. and formal inv. by Capt. Lugar.                               |
| May 30 ..         | Crown of Castile . . . . .                 | Glasgow.....        | Touched between buoys 91 and 93 St. Lawrence Channel.               | Prel. and formal inv. by Capt. Demers.                              |
| June 13...        | Cassandra & Advance . . . . .              |                     | Contravention of Rules of the Road.                                 | Prel. inv. by Capt. Riley and formal inv. by Capt. Demers.          |
| Aug. 9...         | Creigendora . . . . .                      |                     | Stranded near South Pt. Anticosti, Gf. St. Lawrence.                | Prel. and formal inv. by Capt. Demers.                              |
| May 4...          | Ellen.....                                 | Norway.....         | Grounded at entrance of Sydney Harbour.                             | Prel. and formal inv. by Capt. Lugar.                               |
| May 10...         | Grampian . . . . .                         |                     | Stranded at Cap-à-la-Roche.   | Prel. inv. by Capt. Riley   |
| Nov. 6...         | General Wolfe.....                         |                     | Went ashore in Harrington Harbour.                                  | Prel. inv. by Capt. Riley   |
| Apr. 18...        | Hilford.....                               |                     | Stranded near Devil's Island.                                       | Prel. inv. by Capt. Lugar   |
| June 19...        | Heimdal.....                               | Norway.....         | Stranded on Sable Island  | Prel. inv. by Capt. Lugar   |
| Nov. 3...         | Harlaw.....                                |                     | Stranded in Harbour of Sydney.                                      | Prel. inv. by Capt. Gordon.   |
| May 18...         | Invermore & Beluga. . . . .                |                     | Collided at entrance of Sydney Harbour.                             | Prel. and formal inv. by Capt. Lugar.                               |
| May 26...         | Irisbrook.. . . .                          |                     | Stranded near Black Rock Head, Parrsboro, N.S.                      | Prel. and formal inv. by Capt. Lugar.                               |
| June 17...        | John Hanlan & Launch Cecilia. . . . .      | Toronto.....        | Collided in Bay of Toronto  | Prel. inv. by Coroner and formal by Capt. Demers                    |
| Dec. 16...        | John Irwin. . . . .                        |                     | Stranded near Queensport.   | Prel. inv. by Capt. Lugar   |
| May 28...         | Kaslo.....                                 |                     | Wrecked on Kootenay Lake.   | Prel. inv. by Lt. Gordon Hallett.                                   |
| June.. . . .      | Keystone & Gleggarry. . . . .              |                     | Contravention of Rules of the Road.                                 | Capt. Riley held a preliminary investigation.                       |
| Aug. 25...        | Kingdom.....                               | United States ship. | Grounded on Mud Island, N.S.  | Prel. inv. by Capt. Lugar   |
| Jan. 24...        | Lansdown.....                              |                     | Grounded at Public Harbour, N.S.                                    | Prel. and formal inv. by Capt. Lugar.                               |
| May 24...         | Minto & Rosalind... .                      | Halifax, N.S.....   | Collided at Peake's Wharf No. 2, Charlottetown, P.E.I.              | Prel. inv. by Capt. Taylor, formal inv. by Capt. Lugar.             |
| May 19...         | Montezuma.....                             |                     | Grounded on St. Augustine's Bar, St. Lawrence                       | Prel. inv. by Capt. Riley   |
| Aug. 28...        | Manchester Engineer . . . . .              |                     | Grounded on Southwest Pt. of Belle Isle, Belle Isle Strait.         | Prel. and formal inv. by Capt. Demers.                              |
| Sept. 23...       | Montcalm & Kron Prinz Olaf. . . . .        | Norway.....         | Collided near Channel Patch, River St. Lawrence.                    | Prel. inv. by Capts. Lugar and Demers, formal inv. by Capt. Demers. |
| June 20...        | Prinz Oskar.....                           | Norway.....         | Grounded in Strait of Belle Isle, on Flower Pot Ledge.              | Prel. inv. by Capt Demers.  |
| Nov. 6...         | Prinz Adalbert & Tow of Tug Spray. . . . . |                     | Collided and caused damage near Vercheres.                          | Prel. inv. by Capt. Riley   |

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ANNUAL Reports of Wrecks and Casualties which occurred to Canadian and Foreign Vessels in Canadian Waters during 1910—*Concluded.*

| Date of casualty. | Name of ship.                   | Registered port. | Where casualty happened.                                   | Investigation.                         |
|-------------------|---------------------------------|------------------|--|--|
| Aug. 5 ...        | Princess May.....               | .....            | Stranded on Sentinal Island, Alaska.                       | Prel. inv. by Capt. Eddie              |
| Dec. 19....       | Barque Petra.....               | .....            | Stranded on Pennant Island, N.S.                           | Prel. inv. by Capt. Lugar              |
| Dec. 18....       | Plessis & Queen. ....           | .....            | Collided at Chouinard Wharf, Q.                            | Prel. inv. by Capt. Riley              |
| Feb. 14....       | Quadra.....                     | .....            | Stranded on Sydney Spit                                    | Prel. inv. by T. G. Mitchell.          |
| Oct. 29....       | Roberval.....                   | .....            | Sunk at foot of Grenville Canal.                           | Prel. inv. by Capt. Riley              |
| July 11....       | Stigstad.....                   | .....            | Grounded at Cap-à-la-Roche.                                | Prel. inv. by Capt. Riley              |
| Oct. ....         | Symra & Two Schooners.          | .....            | Collided off the Pillars below Quebec, River St. Lawrence. | Prel. inv. by Capt. Riley              |
| Sept. 24...       | St. Denis & Princess Charlotte. | .....            | Contravention of Rules of the Road.                        | Prel. inv. by Capt. Eddie              |
| July 23....       | Trym.....                       | .....            | Grounded at Cap-à-la-Roche.                                | Prel. inv. by Capt. Riley              |
| Sept. 22....      | Trym & Bergeronne.              | .....            | Collided causing damages                                   | Prel. inv. by Capts. Riley and Demers. |
| May. ....         | Westfield.....                  | .....            | Struck an object in vicinity of Cap Charles.               | Prel. inv. by Capt. Riley              |
| May. ....         | Westfield & Sicilian.           | .....            | Came in contact at Windmill Pt.                            | Prel. inv. by Capt. Riley              |
| May. 28....       | Wacousta.....                   | Glasgow .....    | Stranded on St. Paul Island.                               | Prel. and formal inv. by Capt. Lugar.  |

L. A. DEMERS.

## APPENDIX No. 15.

## REPORT ON LIFE-SAVING STATIONS.

SIR,—I have the honour to submit the following report on Life-saving Stations inspected by me during the last season, 1910-11.

## PRINCE EDWARD ISLAND.

*Charlottetown, P.E.I.*—I found the boathouse, boat and gear in good condition; coxswain and crew efficient.

There is but small chance of the boat being called upon for service in the immediate vicinity, but she could be transported by rail to the scene of any wreck, and therefore the station should be maintained. The boathouse, however, is too small and should be enlarged and so fitted that the boat could be loaded straight unto a truck through the rear door.

*Souris, P.E.I.*—Boat and gear in good condition and a very good coxswain and crew. The roof of boathouse is too low and ought to be lifted.

*Priest Pond, P.E.I.*—*Rocket apparatus.*—The brigade carried out a very excellent drill, but 7 men are not sufficient to work the gear.

*Magdalen Islands.*—Accompanied by Mr. S. C. Campbell, I made a complete tour of the islands.

*Pictou Island.*—Boat and boathouse in excellent condition. A very efficient coxswain. Unfortunately I could not get hold of the crew.

*Scatarie, N.S.*—Boathouse, boat and gear in good condition; very good coxswain and crew.

*Canso, N.S.*—House, boat and gear in very good condition. Coxswain and crew very good.

*Whitehead, N.S.*—There had been several letters written about the coxswain reporting that he was too old, was lax in carrying out drills, &c. Mr Campbell and I made a thorough investigation into the matter and came to the following conclusion: That the reports with regard to laxness in carrying out drills were false, and that although somewhat advanced in years, Hugh Munroe is still fitted for the position of coxswain of the lifeboat.

*Devil's Island.*—The boat and gear were in good condition, but the boathouse was dirty and badly kept and Mr. Campbell had to visit the station again at a later date, when he found a good deal of improvement. The coxswain is a good boatman and has a good crew, but seems to be somewhat slovenly.

*Duncan's Cove.*—The best kept house through the maritime provinces; everything in excellent order; coxswain and crew thoroughly up to their work both in the boat and with the Lyle gun.

*Herring Cove.*—Boathouse, boat and gear in good order. Could not get hold of the crew.

*Baker's Cove, (Yarmouth), N.S.*—Very well kept house. Boat and gear in good condition. Coxswain and crew excellent.

*Grand Manan (Outer Wood Island).*—This station was in the course of construction when I visited it.



*Richibucto, N.B.*—Boathouse, boat and gear in excellent condition. Coxswain and crew could not be improved on.

*Banfield Creek, B.C.*—I went from Alberni to Banfield creek in the boat and consider her first-class in every way. The coxswain appeared a very capable intelligent man, with a thorough knowledge of the boat work and a good command over his crew. The crew are a fine able-bodied lot of men. The boathouse and buildings were clean and well kept, but the quarters are very cramped for men living there all the year round, and improved accommodation would render the men more content and be a benefit to the service.

*Ucluelet, B.C.*—This station was not in commission when I visited it, but I got hold of the coxswain who is well fitted for the position, as far as I could judge. The boathouse is in the wrong place and should be moved to French cove, which would make a very good place for the station. The land belongs to a Mr. Charles Spring of James Bay, Victoria, and a half acre would be required for the station.

*Cayoquot, B.C.*—This station was also not in commission, but I had the coxswain, Mr. Arnet with me for two days cruising up and down the coast to find a more suitable place to locate the station. The present position is practically useless as by the time the men had pulled the boat out of the harbour, they would be pretty well done up. There is a place called shelter bay which would be a far better place for the station. I had two thoroughly good boatmen sent to camp there from November 29 to December 10 to watch the conditions, and I have attached a copy of their report.

*Toronto.*—Inspected Toronto life-saving station and exercised the boat's crew. Found the coxswain a very capable man, thoroughly up to his work and the boat's crew very good. The boat itself is good, but the conditions in general most unsatisfactory. The new boathouse has been built at the western entrance to the harbour, while the boat and crew are at the eastern entrance, between two and three miles from the boathouse. A separate memo. with my recommendations has been sent in about this station.

*Long Point.*—I visited the boathouse and was perfectly satisfied with the new position and also with the house itself, which has been built. The crew, not being in commission, I could not exercise the crew.

*Port Stanley.*—I inspected the Port Stanley life-saving station. The coxswain was away, but I took the crew out for exercise and was well satisfied with their work.

*Point Pelee.*—I visited Point Pelee station and saw the proposed coxswain and some of the crew.

*Goderich.*—I visited Goderich and was well satisfied with the coxswain and crew. With proper equipment, this would be a very effective station.

*Kincardine.*—I inspected Kincardine, exercised the crew and was quite pleased with both coxswain and crew.

*Southampton.*—I visited the boathouse at Southampton, but was unable to get the crew together. I inspected the boat and boathouse with the coxswain. Everything in first rate order.

*Collingwood.*—I inspected Collingwood life-saving station. A very good coxswain and crew. The boat and gear in very good order, but the boathouse, which has recently been moved, requires a good deal of repairing.

*Port Hope.*—I visited Port Hope. Boathouse, boat and gear in excellent order. The coxswain and crew thoroughly good boatmen.

*Cobourg.*—I visited Cobourg and found everything in a very satisfactory condition.

*Consecon.*—I visited Consecon, but did not get hold of the crew. The coxswain appears to be an excellent man for the position. The boat, boathouse and gear were exceedingly well kept.

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During the year a permanent station has been established at Little Wood island, Grand Manan, equipped with twin screw motor boat built at Sorel, and a Beebe-McLellan self-bailing boat. The crew consists of coxswain and five men. Telephone cable was laid from Gannet Rock to Little Wood island and from there to Seal cove by Big Wood island.

At Entry island, Magdalen islands, a station was established, equipped with Beebe-McLellan self-bailing surf boat and volunteer crew.

*Long Point, Lake Erie.*—This station has been moved over to the east end of Long Point and the crew established permanently from September 1 to December 31.

*Point Pelee.*—A permanent crew was placed here from September 1 to December 15.

A new twin screw motor boat was built at Sorel for placing at Cheticamp, N.S.

## SERVICES RENDERED BY LIFE-BOATS DURING THE YEAR.

*Brier Island.*—January 10, 1911, the *Archer Crowele* was towed into safety to the Brier island.

*Pictou Boat.*—The *Aurou* wrecked on Pictou island, crew saved by life-boat.

*Cobourg.*—November 27, 1910.—Barge ship went ashore at Cobourg. Lifeboat went to her assistance and she was towed off, it was blowing a gale and very cold.

December 9, the schooner *St. Louis* anchored off Cobourg in heavy gale. The lifeboat went out to her and found the crew exhausted, and ship leaking badly. The lifeboat crew manned the pumps all night and brought her into harbour next day after chopping the sails out of the ice.

July 10, St. Pauls island.—Schooner *Mary A* was carried close in to the rocks. Lifeboat went to her assistance and towed the vessel clear.

April 27, 1910, Canso.—The *Niagara* went ashore on L. W. breaker. Crew of 18 were saved.

September 8, Richibucto.—The *J. H. Plummer* was wrecked on the beach at Richibucto. Crew of 4 saved by lifeboat crew.

October 2.—The *Neil Tow* wrecked on the beach, crew of 2 saved by lifeboat crew.

HENRY THOMPSON,

Commander, R.N.,

General Superintendent of Life Saving Service.

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LIFE-SAVING Stations maintained

| Number.                      | Stations.                | Established. | Coxswain.                             | Crew.  | Coxswain's salary.<br>—<br>Per annum. | Pay of Crew.   |
|------------------------------|--------------------------|--------------|---------------------------------------|--------|---------------------------------------|--|
| <i>New Brunswick—</i>        |                          |              |                                       |        |                                       |  |
| 1                            | Little Wood Island. .... | 1910         | Turner Ingalls..                      | 7      | \$ 60                                 | \$35 per month, 50c. a day board.  |
| 2                            | Richibucto .....         | 1907         | Albert Long....                       | 7      | 75                                    | " " ..   |
| 3                            | Point Escuminac.....     | 1908         | E. F. Fleiger..                       | 7      | 75                                    | " " ..   |
| <i>Nova Scotia—</i>          |                          |              |                                       |        |                                       |  |
| 4                            | Baker's Cove.....        | 1886         | A. Cain.....                          | 7      | 75                                    | " " ..   |
| 5                            | Blanche.....             | 1889         | W. A. B. Smith.                       | 7      | 75                                    | " " ..   |
| 6                            | Clark's Harbour.....     | 1900         | T. N. Nickerson.                      | 7      | 75                                    | " " ..   |
| 7                            | Canso.....               |              | W. R. Matthews                        | 7      | 75                                    | " " ..   |
| 8                            | Devil's Island.....      | 1885         | B. H. Henneberry.                     | 7      | 75                                    | " " ..   |
| 9                            | Duncan's Cove.....       | 1886         | J. W. Holland..                       | 7      | 75                                    | " " ..   |
| 10                           | Herring Cove .....       | 1885         | J. Gorman..                           | 7      | 75                                    | " " ..   |
| 11                           | Pictou Island.....       | 1889         | Alex. Currie....                      | 7      | 75                                    | " " ..   |
| 12                           | Port Mouton .....        | 1889         | Walter Cook....                       | 7      | 75                                    | " " ..   |
| 13                           | Scatarie .....           | 1885         | J. T. Martel....                      | 7      | 75                                    | " " ..   |
| 14                           | Seal Island .....        | 1880         | Thos. Symonds..                       | 7      | 250                                   | \$100 per annum .....  |
| 15                           | St. Paul's Island .....  | 1885         | Supt. Humane Establishment.           | 3      |                                       | \$300 each per annum .....   |
| 16                           | White Head .....         | 1890         | H. P. Monroe ..                       | 7      | 75                                    | \$2 per drill and extra when saving life.  |
| 17                           | Sable Island.....        | 1885         | { G. Soderberg.....<br>J. Ritcey..... | {<br>} | { 250<br>250 }                        | Paid as island staff   |
| <i>Prince Edward Island—</i> |                          |              |                                       |        |                                       |  |
| 18                           | Priest Pond .....        | 1909         | J. J. Ryan. ....                      | 7      | 75                                    | \$2 per drill and extra when saving life.  |
| 19                           | Charlottetown .....      | 1907         |                                       |        |                                       | " " ..   |
| 20                           | Souris.....              | 1907         | N. McIntosh ...                       | 7      | 75                                    | " " ..   |
| 21                           | Alberton.....            | 1907         | John Champion.                        | 7      | 75                                    | " " ..   |
| <i>British Columbia—</i>     |                          |              |                                       |        |                                       |  |
| 22                           | Pachena }<br>Banfield }  | 1909<br>1907 | W. H. Gillen. ....                    | {<br>} | { 40 perm.<br>75 perm.                | \$50 for engineer, \$45 for two men per month.   |
| 23                           | Uclulet.....             | 1908         | A. W. Lyche...                        | 6      | 75 perm                               | \$60 per month for men during season and \$100 per annum when boat is not in commission. Volunteers 50 cents per hour when required. |
| 24                           | Tassiat .....            | 1907         | W. Kennedy....                        | 1      | 60                                    | Patrol .....   |
| 25                           | Clayoquot .....          | 1908         | J. Chesterman..                       | 7      | 75                                    | \$60 per month when employed. Volunteers 50 cents per hour when required.  |
| 26                           | Seven Mile Creek.....    | 1909         | R. E. Daykia...                       | 1      | 60                                    | .....  |

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by the Dominion Government.

| Description of Boat.  | Cost.    | Where Built.                            | Equipment.       | Remarks.   |
|---|----------|---|------------------|--|
|   | \$       |   |                  |  |
| Beebe-McLellan twin screw, motor boat.  | 2,500    | Sorel, P.Q. ....                        | Full regulation. | New station built and telephone communications established between Grand Rock, Little Wood Island and Seal Cove. |
| Race point surf-boat, 24 feet long.   | 225      | " .....                                 | " ..             |  |
| Beebe-McLellan self-bailing....   | 225      | " .....                                 | " ..             | Boathouse to be built.   |
| Dobbin's pattern self-righting, 25 feet long.   | 575      | Dartmouth, N.S.                         | " ..             | Iron rails laid in 1900.   |
| Beebe-McLellan surf-boat, self-bailing, 25 feet long.                                 | 250      | " ..                                    | " ..             | New boat, 1901.  |
| Beebe-McLellan self-bailing, 25 feet long, low ends.                                  | 250      | " ..                                    | " ..             | Boathouse completed June 7, 1909.  |
| Dobbin's pattern, surf-boat, self-bailing, 25 feet long.                              | 575      | " ..                                    | " ..             | Lyle gun at this station.  |
| Beebe-McLellan surf-boat, self-bailing, 25 feet long.                                 | 250      | Shelburne, N.S..                        | " ..             | Lyle gun at this station and new boat in 1903.   |
| " ..  | 250      | " ..                                    | " ..             |  |
| Dobbin's pattern, self-righting and bailing, 25 feet long.                            | 575      | Dartmouth, N.S.                         | " ..             |  |
| " ..  | 575      | " ..                                    | " ..             |  |
| Beebe-McLellan surf-boat, self-bailing, 25 feet long.                                 | 250      | Shelburne, N.S..                        | " ..             | New boat in 1903.  |
| Beebe-McLellan boat on east side.   | 240      | " ..                                    | " ..             | "  |
| Beebe-McLellan boat on west side.   | 240      | Halifax, N.S....                        | " ..             |  |
| Beebe-McLellan self-bailing, 25 feet long, low ends.                                  | 250      | Shelburne, N.S..                        | " ..             | Lyle gun here since 1903.  |
| Dobbin's pattern, surf-boat, self-bailing, 25 feet long.                              | 575      | Dartmouth, N.S.                         | " ..             |  |
| Two Dobbin's pattern, self righting and bailing, and one Beebe-McLellan surf-bailing. | 1,100    | Halifax, N.S. ..                        | " ..             | Lyle gun and rocket apparatus at this station. Coxswain under control of Supt. of Humane Establishment.          |
| Board of Trade apparatus.....   |          | England .....                           | " ..             |  |
| Beebe McLellan self-bailing.....  | 225      | Shelburne, N.S..                        | " ..             |  |
| " ..  | 225      | " ..                                    | " ..             |  |
| " ..  | 225      | " ..                                    | " ..             | Rocket apparatus has been placed and house for the same.   |
| Doherty's Improved Beebe-McLellan, 25 feet long.                                      | 575      | Vancouver Shipyard Co., Vancouver, B.C. | " ..             | Placed at Pachena Bay.   |
| Self-righting self-bailing power, lifeboat, 36 feet long.                             | 1,184 52 | Bayonne City, U.S.A.                    | " ..             | New motor boat and Lyle gun in combination with Pachena Bay.   |
| Doherty's Improved Beebe-McLellan, 25 feet long.                                      | 575      | Vancouver Shipyard Co.                  | " ..             |  |
| " ..  | 575      | " ..                                    | " ..             |  |



## LIFE-SAVING Stations maintained

| Number. | Stations.                            | Established. | Coxswain.         | Crew. | Coxswain's salary. — Per annum. | Pay of crew.   |
|---------|--------------------------------------|--------------|-------------------|-------|---------------------------------|--|
|         | <i>Ontario—</i>                      |              |                   |       | \$                              |  |
| 27      | <i>Great Lakes—</i><br>Cobourg ..... | 1882         | D. Rooney. ....   | 7     | 75                              | \$2 per drill and extra when saving life.                                  |
| 28      | Collingwood .....                    | 1885         | G. F. Watts....   | 7     | 75                              | " " ..   |
| 29      | Goderich .....                       | 1886         | D. MacKay ....    | 7     | 75                              | \$2 per drill and extra when saving life.                                  |
| 30      | Kincardine.....                      | 1903         | Thos. McGaw..     | 7     | 75                              | " " ..   |
| 31      | Long Point.....                      | 1902         | Geo. Wisner...    | 7     | 75                              | 1st April to Dec., Cox. \$60 per month Crew \$50 per month, \$15 board.    |
| 32      | Point Pelee.....                     | 1900         | L. Wilkinson...   | 7     | 75                              | 1st April to 15 Dec., Cox. \$60 per month Crew \$50 per month, \$15 board. |
| 33      | Port Hope.....                       | 1889         | W. T. Clark....   | 7     | 75                              | " " ..   |
| 34      | Port Stanley.....                    | 1885         | J. R. Moore....   | 7     | 75                              | " " ..   |
| 35      | Toronto Island.....                  | 1883         | Wm. Ward.....     | 7     | 75                              | " " ..   |
| 36      | Consecon .....                       | 1898         | John O. McLean    | 7     | 65                              | " " ..   |
| 37      | Southampton.....                     | 1907         | John A. MacAuley. | 7     | 75                              | " " ..   |

NOTE—There are several other places in Canada, not regularly organized, which receive support from N.S., Cape Tormentine, N.B., and Wellington on Lake Ontario. There is also a life saving station at

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by the Dominion Government—*Concluded.*

| Description of boat.                                  | Cost. | Where built.     | Equipment.        | Remarks.   |
|---|-------|------------------|-------------------|--|
|   | \$    |                  |                   |  |
| Dobbin's pattern, self-righting and bailing.          | 750   | Goderich, Ont... | " ..              |  |
| Beebe-McLellan self-bailing surf-boat.                | 375   | Collingwood, O.. | " ..              | New boat in 1896.  |
| Surf-boat.....  | 330   | Collingwood, O.  | Full regulation.. | New boat in 1892.  |
| Beebe-McLellan self-bailing, surf-boat.               | 350   | " ..             | " ..              | New boat in 1903.  |
| Surf-boat.....  | 500   | " ..             | " ..              | Station moved to East end of Point. Telephone communication being established. |
| " .....   | 350   | " ..             | " ..              | A tramway has been constructed at this station.                                |
| Dobbin's pattern, self-righting and bailing.          | 620   | Goderich, Ont..  | " ..              |  |
| Beebe-McLellan surf-boat, self-bailing, 25 feet long. | 350   | Collingwood, O.. | " ..              |  |
| Dobbin's pattern, self-righting and bailing.          | 600   | Goderich, Ont..  | " ..              | Removed from Popular Point in 1900.  |
| " ..  | 750   | " ..             | " ..              | Removed from Wellington in 1893.   |
| Beebe-McLellan surf-boat, self-Bailing.               | 330   | Collingwood, O.  | " ..              |  |

the Dominion Government, where there is a life-saving service of more or less importance, such as Halifax, Victoria, B.C., maintained by the Victoria Life Saving Association.

2 GEORGE V., A. 1912

## EXPENDITURE IN LIFE-SAVING SERVICE TO MARCH 31, 1911.

|  |             |
|--|-------------|
| General account. . . . .                     | \$11,179 53 |
| <i>Nova Scotia—</i>                          |             |
| Baker's cove. . . . .                        | 283 22      |
| Blanche. . . . .                             | 324 40      |
| Clark's harbour. . . . .                     | 346 00      |
| Devil's island. . . . .                      | 271 00      |
| Duncan's cove. . . . .                       | 301 25      |
| Halifax. . . . .                             | 196 13      |
| Herring cove. . . . .                        | 276 00      |
| Pictou. . . . .                              | 404 90      |
| Port Mouton. . . . .                         | 277 90      |
| Scatarie. . . . .                            | 345 00      |
| Seal island. . . . .                         | 687 50      |
| Whitehead. . . . .                           | 271 00      |
| Westport. . . . .                            | 365 00      |
| Canso. . . . .                               | 358 77      |
| Grand Entry. . . . .                         | 584 89      |
| <i>Prince Edward Island—</i>                 |             |
| Alberton. . . . .                            | 171 52      |
| Charlottetown. . . . .                       | 297 55      |
| Cascumpeque. . . . .                         | 208 29      |
| Priest Pond. . . . .                         | 396 68      |
| Souris. . . . .                              | 306 55      |
| <i>New Brunswick—</i>                        |             |
| Escuminac. . . . .                           | 1,460 42    |
| Grand Manan. . . . .                         | 90 00       |
| Richibucto. . . . .                          | 374 60      |
| Little Wood island. . . . .                  | 6,680 56    |
| <i>Ontario—</i>                              |             |
| Cobourg. . . . .                             | 570 00      |
| Collingwood. . . . .                         | 304 34      |
| Goderich. . . . .                            | 470 71      |
| Kincardine. . . . .                          | 299 03      |
| Long Point. . . . .                          | 2,799 97    |
| Pelee. . . . .                               | 1,838 25    |
| Port Hope. . . . .                           | 341 78      |
| Port Rowan. . . . .                          | 488 55      |
| Port Stanley. . . . .                        | 327 89      |
| Toronto. . . . .                             | 562 39      |
| Weller's bay. . . . .                        | 389 93      |
| Southampton. . . . .                         | 220 50      |
| <i>British Columbia—</i>                     |             |
| Banfield. . . . .                            | 10,074 02   |
| Clayoquot. . . . .                           | 4,196 30    |
| Cloose. . . . .                              | 120 00      |
| Seven Mile creek. . . . .                    | 225 02      |
| Ucluelet. . . . .                            | 5,119 25    |
| Total expenditure to March 31, 1911. . . . . | 55,406 59   |

## APPENDIX No. 16.

## LIVE STOCK SHIPMENTS.

LIST of shipments of live stock from St. John, N.B., during season of 1910-11.

| Months        | Sheep. | Cattle. | Horses. | U. S. Cattle. |
|---------------|--------|---------|---------|---------------|
| 1910.         |        |         |         |               |
| December..... |        | 1,225   |         | 1,150         |
| 1911.         |        |         |         |               |
| January.....  |        |         |         |               |
| February..... | 1,499  | 76      | 9       | 76            |
| March.....    | 1,009  | 626     |         | 626           |
| April.....    |        | 1,374   | 10      | 689           |
|               | 2,508  | 3,301   | 19      | 2,541         |

DIFFERENT Ocean Lines by which live stock was shipped, during the season of 1910-11, from St. John, N.B.

| Steamer.              | Sheep. | Cattle. | Horses. |
|-----------------------|--------|---------|---------|
| Athenia.....          |        | 111     |         |
| Canadian Pacific..... | 2,508  | 2,809   |         |
| Cassandra.....        |        |         | 9       |
| Donaldson.....        |        |         | 10      |
| Manchester.....       |        | 381     |         |
|                       | 2,508  | 3,301   | 19      |

DIFFERENT Ocean Lines by which stock was shipped from the Port of Montreal, during season of 1910.

| Steamers.                            | Sheep. | Cattle. | Horses. |
|--------------------------------------|--------|---------|---------|
| Allan Line.....                      |        | 5,618   | 11      |
| Athenia.....                         |        | 1,685   | 11      |
| British and North Atlantic Line..... |        | 12,878  |         |
| Cairn Line.....                      |        | 12,577  |         |
| Canadian Pacific Railway.....        |        | 28,019  | 31      |
| Cassandra.....                       |        | 1,200   | 3       |
| Domnion.....                         |        | 698     |         |
| Donaldson.....                       |        | 4,654   | 35      |
| Manchester.....                      |        | 4,684   |         |
| Parthania.....                       |        | 524     |         |
| Elder Dempster.....                  |        |         | 280     |
| Sir Alfred N. Jones Line.....        | 248    | 18      |         |
|                                      | 248    | 72,555  | 477     |



RECORD of Live Stock shipped from the Port of Montreal during season of 1910.

| Months.        | Sheep. | Cattle. | Horses. | U. S. Cattle. |
|----------------|--------|---------|---------|---------------|
| May.....       |        | 6,966   | 27      |               |
| June.....      |        | 8,067   | 12      |               |
| July.....      |        | 12,731  | 101     | 33            |
| August.....    | 83     | 12,551  | 132     |               |
| September..... |        | 10,466  | 13      |               |
| October.....   | 167    | 12,177  | 20      | 14            |
| November.....  |        | 9,597   | 192     | 132           |
|                | 248    | 72,555  | 497     | 179           |

United States cattle included in the total of 72,555, Three hundred and seventy-eight mules included in the total of (497 horses).

COMPARATIVE STATEMENT of the number of Cattle shipped from Canada to British ports from the years 1902-3 to 1910-11.

|            | SHEEP.    |           |          | CATTLE.   |           |          | HORSES.   |           |          | TOTALS. |         |         |
|------------|-----------|-----------|----------|-----------|-----------|----------|-----------|-----------|----------|---------|---------|---------|
|            | Montreal. | St. John. | Halifax. | Montreal. | St. John. | Halifax. | Montreal. | St. John. | Halifax. | Sheep.  | Cattle. | Horses. |
| 1910-11... | 248       | 2,508     | Nil      | 72,555    | 3,301     | Nil      | 497       | 19        | Nil      | 2,756   | 75,856  | 516     |
| 1909-10... | 1,616     | Nil       | "        | 94,314    | 4,632     | "        | 286       | Nil       | "        | 1,616   | 98,946  | 286     |
| 1908-9.... | 10,111    | 151       | "        | 99,830    | 22,923    | 3,097    | 116       | 65        | "        | 10,262  | 125,850 | 181     |
| 1907-8.... | 11,585    | 4,168     | "        | 96,977    | 20,210    | Nil      | 174       | 51        | "        | 15,753  | 127,187 | 225     |
| 1906-7.... | 10,791    | 1,371     | "        | 128,160   | 31,148    | "        | 661       | 57        | "        | 12,162  | 159,308 | 718     |
| 1905-6.... | 19,077    | 3,971     | "        | 126,871   | 33,543    | 1,042    | 568       | 79        | "        | 23,048  | 161,456 | 647     |
| 1904-5.... | 49,422    | 17,283    | "        | 108,553   | 33,833    | 745      | 279       | 213       | "        | 66,715  | 143,131 | 492     |
| 1903-4.... | 57,741    | 23,428    | 1,475    | 133,594   | 25,855    | 5,456    | 361       | 31        | 31       | 82,644  | 164,905 | 423     |
| 1902-3.... | 61,017    | 19,310    | 426      | 147,201   | 37,453    | 3,856    | 373       | 115       | 17       | 80,753  | 188,510 | 503     |

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## APPENDIX No. 17.

## SIGNAL SERVICE, CANADA.

## CITADEL SIGNAL STATION.

RECORD of Shipping as per record folio, from April 1, 1910 to March 31, 1911.

| Months.       | Men of War,<br>British. |    |    | Men of War,<br>Foreign. |    |    | Steamers,<br>1st Class. |     |    | Steamers,<br>2nd Class. |     |    | Ships, Barques<br>and Barquen-<br>tines. |    |    | Brigs and Bri-<br>gantines. |    |    | Schooners, 3<br>masted bearing<br>Pt. Signal. |    |    | Monthly<br>Totals. |      |    |
|---------------|-------------------------|----|----|-------------------------|----|----|-------------------------|-----|----|-------------------------|-----|----|--|----|----|-----------------------------|----|----|---|----|----|--------------------|------|----|
|               | R.                      | A. | P. | R.                      | A. | P. | R.                      | A.  | P. | R.                      | A.  | P. | R.                                       | A. | P. | R.                          | A. | P. | R.  | A. | P. | R.                 | A.   | P. |
| 1910-1911.    |                         |    |    |                         |    |    |                         |     |    |                         |     |    |  |    |    |                             |    |    |   |    |    |                    |      |    |
| April.....    |                         |    |    |                         |    |    | 54                      | 54  |    | 33                      | 33  |    | 3  | 3  |    |                             |    |    | 2   | 2  |    | 92                 | 92   |    |
| May.....      | 2                       | 2  |    |                         |    |    | 40                      | 40  |    | 57                      | 57  |    | 2  | 2  |    |                             |    |    | 7   | 7  |    | 108                | 108  |    |
| June.....     |                         |    |    |                         |    |    | 46                      | 45  | 1  | 62                      | 62  |    | 2  | 2  |    |                             |    |    | 6   | 6  |    | 116                | 115  | 1  |
| July.....     |                         |    |    |                         |    |    | 49                      | 48  | 1  | 70                      | 70  |    | 1  | 1  |    |                             |    |    | 6   | 6  |    | 126                | 125  | 1  |
| August.....   |                         |    |    |                         |    |    | 62                      | 58  | 4  | 73                      | 73  |    | 2  | 2  |    | 1                           | 1  |    | 7   | 7  |    | 145                | 141  | 4  |
| September..   |                         |    |    |                         |    |    | 55                      | 52  | 3  | 66                      | 66  |    |  |    |    | 1                           | 1  |    | 15  | 14 | 1  | 137                | 133  | 4  |
| October.....  | *1                      | 1  |    |                         |    |    | 50                      | 49  | 1  | 60                      | 60  |    |  |    |    | 2                           | 1  | 1  | 11  | 11 |    | 124                | 122  | 2  |
| November..    | 2                       | 2  |    |                         |    |    | 51                      | 50  | 1  | 65                      | 65  |    |  |    |    | 1                           | 1  |    | 5   | 5  |    | 124                | 123  | 1  |
| December..    |                         |    |    |                         |    |    | 58                      | 58  |    | 59                      | 59  |    |  |    |    |                             |    |    | 15  | 15 |    | 132                | 132  |    |
| January.....  |                         |    |    |                         |    |    | 60                      | 59  | 1  | 36                      | 36  |    |  |    |    |                             |    |    | 3   | 3  |    | 99                 | 98   | 1  |
| February..... |                         |    |    |                         |    |    | 55                      | 55  |    | 24                      | 24  |    |  |    |    |                             |    |    | 4   | 4  |    | 83                 | 83   |    |
| March.....    |                         |    |    |                         |    |    | 74                      | 74  |    | 34                      | 34  |    | 1  | 1  |    |                             |    |    | 4   | 4  |    | 113                | 113  |    |
| Totals....    | 5                       | 5  |    |                         |    |    | 654                     | 642 | 12 | 639                     | 639 |    | 11                                       | 11 |    | 5                           | 4  | 1  | 85  | 84 | 1  | 1399               | 1385 | 14 |

Total vessels reported..... 1,399  
 " arrived..... 1,385  
 " passed..... 14

HALIFAX, N.S., April 4, 1911.

P. S. BENOIT, Capt. R.C.E.,  
*Superintendent of Signals.*

## APPENDIX No. 18.

## SABLE ISLAND.

SABLE ISLAND, December 28, 1910.

TO CHARLES H. HARVEY, Esq.,  
Agent Marine and Fisheries,  
Halifax, N.S.

SIR,—The following report is submitted for the year 1910:—

## WRECKS AND CASUALTIES.

June 18.—Norwegian steamship *Heindal*, 1,857 tons, Capt. Gabrulsen, from Santos to New Brunswick, struck south side, 4 miles east of No. 1 station; crew saved. Efforts to refloat her were not successful and she became a total loss.

December 5.—An unknown schooner ran on the N.W. wet bar during the afternoon. Got off again without assistance.

## BOATS AND APPARATUS.

No change in the condition or position of boats since last reported. A new 'Beebe-McLellan' lifeboat was received late in the year, to replace the *Grace Darling* condemned.

## PATROL.

The island was patrolled on service 97 times. Sixty-three times in the morning, and 34 times at night.

## STAFF CHANGES.

Douglas Henneberry succeeded Reuben Naugle as keeper of No. 2 station in April. Walter Blank succeeded A. J. Horne as keeper of west end light on July 2. Blank was succeeded by John Edwards, October 20.

## BUILDING AND REPAIRS.

*No. 1 Station.*—Concrete wall built under south end of cattle barn; also concrete manure pit.

Small boathouse, 12' by 24' built near lake to accommodate small boats used in the lake.

*West Light.*—Tower painted two coats. New sill under barn and general repair. Oil house repaired and some small repairs to dwelling.

*No. 3 Station.*—Some general repairs to all buildings.

## FARMING.

A wet season gave good crops in nearly everything planted. Potatoes were especially good, both in quality and yield. Cultivated hay was also very fine, as was also the wild hay, and sufficient was made, with the addition of a carload sent from Halifax, to supply the stock.

## SESSIONAL PAPER No. 21

*Live stock on hand—*

- 65 head cattle.
- 30 trained horses.
- 1 imported stallion
- 4 imported mares.
- 6 hogs.
- 200 wild ponies.

*Stock killed—*

- 6 beeves weighing 3,881 lbs.
- 13 hogs weighing 2,124 lbs.

*Shipped—*

- 116 barrels cranberries.
- 30 ponies to Newfoundland.
- 6 ponies to Halifax. One returned.
- 5 barrels salted hides.
- 1 cask oil.

*Salved by ex-SS. 'Skidby'—*

- 23 tons of coal.

Teaming was done for the Halifax Wrecking Co., also for Chas. Brister & Son, Ltd., in connection with the salving operations on SS. *Heindal*.

## CENSUS, DECEMBER 28, 1910.

*No. 1 Station.*—Supt. R. Boutilier and family, 3; Carpenter, Wm. Byrne; Cook, Jos. Thompson; Supernumerary, J. Dunne; Boatmen, M. Noonan, A. Whare, E. McGrath, V. Horne, A. Dunsworth, 8—11.

*No. 2 Station.*—Keeper, Douglass Henneberry; Asst. Allan Henneberry—2.

*No. 3 Station.*—Keeper, Stewart Glazebrook and family, 3; Assistant, Alex. Henneberry, 1—4.

*No. 4 Station.*—Keeper, Gustav Soderburg and wife, 2; Ernest DeYoung, 1—3.

*East Light.*—John Gregoire and family, 6; Assistant, Henry Naugle, 1—7.

*West Light.*—John Edwards and family, 5; Assistant, James Horne, 1—6.

*Marconi Wireless Station.*—Newman, P. Healey, G. Watson, A. Gardner; Cook,

W. White—5.

Total—38.

R. BOUTILIER,  
*Superintendent, Sable Island.*



## APPENDIX No. 19.

## MASTERS AND MATES' CERTIFICATES.

During the twelve months ended March 31, 1911, the following grades of certificates were issued to masters and mates:—19 masters', 12 mates' and 14 second mates' sea-going certificates of competency; 74 masters' and 50 mates' coasting certificates of competency; 36 masters' and 40 mates' inland waters certificates of competency; 50 masters' and 35 mates' minor inland waters certificates of competency; 1 master's coasting certificate of service; and 22 masters' temporary certificates.

The total amount collected in the way of fees for certificates during the twelve months ended March 31, 1911, was \$4,446.61 and the amount expended on account of this service was \$5,801.62, an excess of expenditure over receipts of \$1,355.01.

The following statement shows the total receipts and expenditures on account of masters and mates during the last ten years.

|   | Expenditure. |      | Receipts. |      |
|---|--------------|------|-----------|------|
|   | \$           | cts. | \$        | cts. |
| For the fiscal year ended June 30 1902..... | 3,305        | 59   | 5,288     | 52   |
| " " 1903.....                               | 4,968        | 36   | 5,790     | 50   |
| " " 1904.....                               | 7,761        | 17   | 4,795     | 00   |
| " " 1905.....                               | 5,884        | 74   | 4,643     | 85   |
| " " 1906.....                               | 7,068        | 15   | 5,526     | 00   |
| " ended March 31 1907 (nine months).....    | 5,934        | 16   | 2,294     | 50   |
| " " 1908.....                               | 11,508       | 31   | 4,306     | 05   |
| " " 1909.....                               | 8,244        | 56   | 4,192     | 50   |
| " " 1910.....                               | 6,662        | 52   | 4,314     | 50   |
| " " 1911.....                               | 5,801        | 62   | 4,446     | 61   |
| Expenditure.....                            | 67,139       | 18   | 45,598    | 03   |
| Receipts.....                               | 45,598       | 03   |           |      |
| Excess of expenditure over receipts.....    | 21,541       | 15   |           |      |

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LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1910.

| No. of certificate. | Date of certificate. | Name.                      | Grade.               | Address.                    | Where examination was passed. | Fee.  |
|---------------------|----------------------|----------------------------|----------------------|-----------------------------|-------------------------------|-------|
|                     | 1919                 |                            |                      |                             |                               | \$    |
| 5754                | April 1              | Alexander Brown.....       | Mate.....            | Owen Sound, Ont. ....       | Windsor, Ont. ....            | 6 00  |
| 5755                | " 1                  | Harve Alton Irving.....    | " .....              | Hamilton, Ont. ....         | " .....                       | 6 00  |
| 5756                | " 1                  | William Taylor.....        | " .....              | Waubuno, Ont. ....          | " .....                       | 6 00  |
| 5757                | " 1                  | George A. Davis.....       | Master.....          | Smith's Falls, Ont. ....    | Ottawa, Ont. ....             | 15 00 |
| 5758                | " 1                  | Jas. Eldridge McDonald..   | " .....              | Esquimalt, B.C. ....        | Victoria, B.C. ....           | 15 00 |
| 5759                | " 1                  | John Alexander Orr.....    | " .....              | Jardineville, N.B. ....     | Yarmouth, N.S. ....           | 15 00 |
| 5760                | " 1                  | Stephen Patrick Ahern..... | " .....              | Port Dalhousie, Ont. ....   | Toronto, Ont. ....            | 15 00 |
| 5761                | " 1                  | Wm. Matthew Thomas..       | " .....              | Port Robinson, Ont. ....    | " .....                       | 15 00 |
| 5762                | " 1                  | Robert Scott Misner.....   | " .....              | Sault Ste. Marie, Ont. .... | Collingwood, Ont. ....        | 15 00 |
| 5763                | " 1                  | Clement E. Miller.....     | " .....              | Halifax, N.S. ....          | Halifax, N.S. ....            | 15 00 |
| 5764                | " 1                  | Albert John Moran.....     | Mate.....            | " .....                     | " .....                       | 6 00  |
| 5765                | " 1                  | Hector McLean.....         | " .....              | Maxwell, Ont. ....          | Collingwood, Ont. ....        | 6 00  |
| 5766                | " 1                  | Ovila Seguin.....          | " .....              | Hudson Heights, P.Q. ....   | Ottawa, Ont. ....             | 6 00  |
| 5767                | " 1                  | Harry Robert Storey.....   | " .....              | Collingwood, Ont. ....      | Collingwood, Ont. ....        | 6 00  |
| 5768                | " 1                  | Wm. Lawrence Yates.....    | " .....              | Vancouver, B.C. ....        | Vancouver, B.C. ....          | 6 00  |
| 5769                | " 1                  | Otto Ludlow Estabrooks..   | " .....              | Okanagan, Landing.....      | " .....                       | 6 00  |
| 5770                | " 1                  | Henry Clarke.....          | " .....              | Waupee East, Ont. ....      | Toronto, Ont. ....            | 6 00  |
| 5771                | " 1                  | Alfred Edward Fraser.....  | " .....              | Keewatin.....               | West Selkirk, Man. ....       | 6 00  |
| 5772                | " 1                  | Chas. Ashley Murdoch.....  | " .....              | Sherbrooke, N.S. ....       | Halifax, N.S. ....            | 6 00  |
| 5773                | " 1                  | Wm. F. Nuttall.....        | Master.....          | Port Arthur, Ont. ....      | Port Arthur, Ont. ....        | 15 00 |
| 5774                | " 1                  | Imrie Andrew Thompson ..   | " .....              | " .....                     | " .....                       | 15 00 |
| 5775                | " 1                  | Angus Gordon Mackay.....   | Mate.....            | Owen Sound, Ont. ....       | Toronto, Ont. ....            | 6 00  |
| 5776                | " 1                  | Thos. Francis Murphy.....  | Master.....          | Elgin, Leeds, Ont. ....     | Collingwood, Ont. ....        | 15 00 |
| 5777                | " 1                  | Robert Edwin Nuttall.....  | " .....              | Port Arthur, Ont. ....      | Port Arthur, Ont. ....        | 15 00 |
| 5778                | " 1                  | George Philemon Stitt..... | " .....              | Fort William, Ont. ....     | " .....                       | 15 00 |
| 5779                | " 1                  | Angus Morrison.....        | " .....              | Port Arthur, Ont. ....      | " .....                       | 15 00 |
| 5780                | " 1                  | Edward McDonald.....       | " .....              | " .....                     | " .....                       | 15 00 |
| 5781                | " 1                  | Harry Friday.....          | Mate.....            | " .....                     | " .....                       | 6 00  |
| 5782                | " 1                  | John Edward Bradden.....   | Master.....          | Kingston, Ont. ....         | " .....                       | 15 00 |
| 5783                | " 1                  | Joseph Friday.....         | " .....              | Port Arthur, Ont. ....      | " .....                       | 15 00 |
| 5784                | " 1                  | Wm. C. Thompson.....       | " .....              | " .....                     | " .....                       | 15 00 |
| 5785                | " 1                  | Oswald Marin.....          | " .....              | " .....                     | " .....                       | 15 00 |
| 5786                | " 1                  | Francis John Ames.....     | Master (temp. cert.) | Muskoka, Ont. ....          | Collingwood, Ont. ....        | 5 00  |
| 5787                | " 1                  | Joseph Harris Daball.....  | Master (temp. cert.) | Parry Sound, Ont. ....      | " .....                       | 5 00  |
| 5788                | " 26                 | James Godin.....           | Master.....          | Dalhousie, N.B. ....        | Charlottetown, P.E.I. ....    | 15 00 |
| 5789                | " 26                 | Alexander Geddes.....      | Mate.....            | Hamilton, Ont. ....         | Windsor, Ont. ....            | 6 00  |
| 5790                | " 30                 | Dougald McIntyre.....      | Master.....          | Owen Sound, Ont. ....       | Collingwood, Ont. ....        | 15 00 |
| 5791                | " 30                 | Joseph E. Ouellette.....   | Mate.....            | Lachine, P.Q. ....          | Montreal, P.Q. ....           | 6 00  |
| 5792                | " 30                 | William McGrath.....       | Master.....          | Port Wade, N.S. ....        | Yarmouth, N.S. ....           | 15 00 |
| 5793                | " 30                 | Thomas Neville.....        | " .....              | Collingwood, Ont. ....      | Collingwood, Ont. ....        | 15 00 |
| 5794                | " 30                 | Brenton Young.....         | " .....              | Summersville, N.S. ....     | Yarmouth, N.S. ....           | 15 00 |
| 5795                | " 30                 | William Apt.....           | " .....              | Granville Ferry, N.S. ....  | " .....                       | 15 00 |
| 5796                | " 30                 | William C. Lediard.....    | " .....              | Midland, Ont. ....          | Toronto, Ont. ....            | 15 00 |
| 5797                | " 30                 | James Dixon.....           | " .....              | Port Dalhousie, Ont. ....   | " .....                       | 15 00 |
| 5798                | " 30                 | Ernest A. Johnson.....     | " .....              | L'Orignal, P.Q. ....        | Montreal, P.Q. ....           | 15 00 |
| 5799                | " 30                 | Malcolm F. MacDonald.....  | " .....              | Vancouver, B.C. ....        | Vancouver, B.C. ....          | 15 00 |
| 5800                | " 30                 | Charles A. Britton.....    | Master (temp. cert.) | Sturgeon Falls, Ont. ....   | Toronto, Ont. ....            | 5 00  |
| 5801                | " 30                 | William Taylor.....        | Master.....          | Bellerran, Newfld. ....     | Port Arthur, Ont. ....        | 15 00 |
| 5802                | " 30                 | James A. Cuthbert.....     | Mate.....            | Lakeport, Ont. ....         | Toronto, Ont. ....            | 6 00  |
| 5803                | " 30                 | John Albert Scott.....     | Master.....          | Victoria Harbor, Ont. ....  | " .....                       | 15 00 |
| 5804                | " 30                 | George James Vent.....     | " .....              | " .....                     | " .....                       | 15 00 |
| 5805                | " 30                 | Wilford Jewitt.....        | " .....              | Penetanguishene, Ont. ....  | Collingwood, Ont. ....        | 15 00 |
| 5806                | " 30                 | " .....                    | Mate.....            | " .....                     | " .....                       | 6 00  |
| 5807                | " 30                 | Christopher L. Allen.....  | Master.....          | Port Dalhousie, Ont. ....   | Windsor, Ont. ....            | 15 00 |
| 5808                | " 30                 | Joseph John Walsh.....     | " .....              | Young's Point, Ont. ....    | Ottawa, Ont. ....             | 15 00 |
| 5809                | " 30                 | Thomas E. Jones.....       | Mate.....            | Sault Ste. Marie, Ont. .... | Windsor, Ont. ....            | 6 00  |
| 5810                | " 30                 | Addison S. Hayward.....    | Master.....          | Wallaceburg, Ont. ....      | " .....                       | 15 00 |
| 5811                | " 30                 | John Halcolm Allen.....    | Mate.....            | Sarnia, Ont. ....           | " .....                       | 6 00  |
| 5812                | " 30                 | Matthew C. McCaw.....      | Master.....          | North Bay, Ont. ....        | Collingwood, Ont. ....        | 15 00 |
| 5813                | " 30                 | Charles Kane.....          | " .....              | Halifax, N.S. ....          | Yarmouth, N.S. ....           | 15 00 |
| 5814                | " 30                 | John Thomas McLaine.....   | " .....              | Charlottetown, P.E.I. ....  | Charlottetown, P.E.I. ....    | 15 00 |

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LIST of certificates of competency issued to masters and mates of inland and coasting vessels, during the twelve months ended 31st March, 1910—*Continued.*

| No. of Certificate | Date of Certificate | Name.                     | Grade.                      | Address.                          | Where examination was passed. | Fee.  |
|--------------------|---------------------|---------------------------|-----------------------------|-----------------------------------|-------------------------------|-------|
|                    | 1909                |                           |                             |                                   |                               | \$    |
| 5815               | April 30            | Joseph Henry Glass....    | Mate .....                  | Sarnia, Ont. ....                 | Windsor, Ont. ....            | 6 00  |
| 5816               | " 30                | Malcolm McKinnon....      | Master.....                 | Nelson, B.C. ....                 | Victoria, B.C. ....           | 15 00 |
| 5817               | " 30                | Angus D. McDonald....     | " .....                     | Canso, N.S. ....                  | North Sydney, N.S. ....       | 15 00 |
| 5818               | " 30                | Henri Caza .....          | Master.. ....               | Cornwall, Ont. ....               | Ottawa, Ont. ....             | 15 00 |
| 5819               | " 30                | Thomas Arthur Brown ..    | Mate .....                  | Southampton, Ont. ....            | Windsor, Ont. ....            | 6 00  |
| 5820               | " 30                | Robert Wilson .....       | " .....                     | Vancouver, B.C. ....              | Vancouver, B.C. ....          | 6 00  |
| 5821               | " 30                | Isaac Butler .....        | Master.....                 | " .....                           | Vancouver, B.C. ....          | 15 00 |
| 5822               | " 30                | William J. Merchant....   | Mate .....                  | Pembroke, Ont. ....               | Ottawa, Ont. ....             | 6 00  |
| 5823               | " 30                | James Warner Rigney ..    | Master.....                 | Sarnia, Ont. ....                 | Windsor, Ont. ....            | 15 00 |
| 5824               | " 30                | David A. Chambers .....   | Mate .....                  | Courtwright, Ont. ....            | Windsor, Ont. ....            | 6 00  |
| 5825               | " 30                | Herbert James Aitken ..   | " .....                     | " .....                           | Windsor, Ont. ....            | 6 00  |
| 5826               | " 30                | John Vautier .....        | Master.....                 | North Sydney, N.S. ....           | North Sydney, N.S. ....       | 15 00 |
| 5827               | " 30                | Hugh Allan Cameron ..     | " .....                     | Keewatin, Ont. ....               | West Selkirk, Man. ....       | 15 00 |
| 5828               | " 30                | Abel Pearce .....         | Mate .....                  | Strathcona, Alta. ....            | Edmonton, Alta. ....          | 6 00  |
| 5829               | " 30                | Samuel Duvall .....       | " .....                     | Young's Point, Ont. ....          | Toronto, Ont. ....            | 6 00  |
| 5830               | " 30                | William Cook .....        | Master, (temp. cert.) ..... | Granville, Ont. ....              | Ottawa, Ont. ....             | 5 00  |
| 5831               | " 30                | Telesphore Martin .....   | Master, (temp. cert.) ..... | Point Fortune, Que. ....          | Montreal, P.Q. ....           | 5 00  |
| 5832               | " 30                | Sidney Smith .....        | Master, (temp. cert.) ..... | Port Arthur, Ont. ....            | Kenora, Ont. ....             | 5 00  |
| 5833               | " 30                | Thomas Binnie .....       | Master, (temp. cert.) ..... | " .....                           | Kenora, Ont. ....             | 5 00  |
| 5834               | May 12              | Lambert Pilon .....       | Master, (temp. cert.) ..... | Grenville, Que. ....              | Ottawa, Ont. ....             | 5 00  |
| 5835               | " 17                | Howard Lord .....         | Mate .....                  | Fryon, P.E.I. ....                | Charlottetown, P.E.I. ....    | 6 00  |
| 5836               | " 17                | Julian Jacobson .....     | Master.....                 | Prince Albert, Sask. ....         | Edmonton, Alta. ....          | 15 00 |
| 5837               | " 17                | William N. Coughlin ..    | " .....                     | Summerside, P.E.I. ....           | Charlottetown, P.E.I. ....    | 15 00 |
| 5838               | " 17                | Oliver G. Kinnie .....    | Mate .....                  | Vancouver, B.C. ....              | Vancouver, B.C. ....          | 6 00  |
| 5839               | " 17                | Angus Allord .....        | Master.....                 | Restigouche, N.B. ....            | St. John, N.B. ....           | 15 00 |
| 5840               | " 17                | Delbert D. Clayton ..     | " .....                     | St. John, N.B. ....               | St. John, N.B. ....           | 15 00 |
| 5841               | " 17                | Burpee A. Barton .....    | " .....                     | Range Queens Co. N.B. ....        | St. John, N.B. ....           | 15 00 |
| 5842               | " 17                | Howard B. Golding .....   | " .....                     | St. John, N.B. ....               | St. John, N.B. ....           | 15 00 |
| 5843               | " 17                | Charles D. MacLean .....  | " .....                     | Chatham, N.B. ....                | Halifax, N.S. ....            | 15 00 |
| 5844               | " 17                | Charles T. Livingstone .. | " .....                     | St. John, N.B. ....               | St. John, N.B. ....           | 15 00 |
| 5845               | " 17                | Bernard Dolan .....       | " .....                     | Annapolis, N.B. ....              | Halifax, N.S. ....            | 15 00 |
| 5846               | " 17                | Charles Alex Webster ..   | Mate .....                  | Lion's Head, Ont. ....            | Windsor, Ont. ....            | 6 00  |
| 5847               | " 17                | James Caufield .....      | Master.....                 | Westminster, B.C. ....            | Vancouver, B.C. ....          | 15 00 |
| 5848               | " 17                | Angus McLeod .....        | Mate .....                  | Proctor, B.C. ....                | Nelson, B.C. ....             | 6 00  |
| 5849               | " 17                | Alban Robineau .....      | Master.....                 | Montreal, P.Q. ....               | Montreal, P.Q. ....           | 15 00 |
| 5850               | " 17                | Edward Miller .....       | Master, (temp. cert.) ..... | Peninsula, P.Q. ....              | Ottawa, Ont. ....             | 5 00  |
| 5851               | " 17                | John Standly .....        | Master, (temp. cert.) ..... | Banff, Alta. ....                 | Kenora, Ont. ....             | 5 00  |
| 5852               | " 17                | John Cunningham .....     | Master, (temp. cert.) ..... | Gaudette, P.Q. ....               | Ottawa, Ont. ....             | 5 00  |
| 5853               | " 17                | Phidime Hamel .....       | Master.....                 | Ste. Jean des Chailons, P.Q. .... | Ottawa, Ont. ....             | 15 00 |
| 5854               | June 8              | Thomas Bell .....         | Mate .....                  | Victoria, B.C. ....               | Victoria, B.C. ....           | 6 00  |
| 5855               | " 8                 | Wilfrid DeMontigny ..     | Master, (temp. cert.) ..... | Montreal, P.Q. ....               | Montreal, P.Q. ....           | 5 00  |
| 5856               | " 8                 | John Boden .....          | Master.....                 | Vancouver, B.C. ....              | Vancouver, B.C. ....          | 15 00 |
| 5857               | " 8                 | John Thompson .....       | " .....                     | Rexton, N.B. ....                 | Charlottetown, P.E.I. ....    | 15 00 |
| 5858               | " 8                 | James Hunter .....        | Mate .....                  | Victoria, B.C. ....               | Victoria, B.C. ....           | 6 00  |
| 5859               | " 8                 | Thomas Thomson .....      | Master.....                 | " .....                           | Victoria, B.C. ....           | 15 00 |
| 5860               | " 8                 | James McGuire .....       | " .....                     | Amherstburg, Ont. ....            | Windsor, Ont. ....            | 15 00 |
| 5861               | " 8                 | Willis Balcom .....       | " .....                     | Victoria, B.C. ....               | Victoria, B.C. ....           | 15 00 |
| 5862               | " 8                 | John Joseph Smith .....   | Mate .....                  | Kamloops, B.C. ....               | Vancouver, B.C. ....          | 6 00  |
| 58 3               | " 8                 | Frank Wm. Broughton ..    | Master.....                 | Harrop's, B.C. ....               | Nelson, B.C. ....             | 15 00 |
| 5864               | " 8                 | William G. Bartley .....  | Mate .....                  | Fort Frances, Ont. ....           | West Selkirk, Man. ....       | 6 00  |
| 5865               | " 8                 | John Joseph Moore .....   | " .....                     | Victoria, B.C. ....               | Victoria, B.C. ....           | 6 00  |



## SESSIONAL PAPER No. 21

List of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1910—Continued.

| No. of certificate. | Date of certificate. | Name.                                  | Grade.                     | Address.   | Where examination was passed. | Fee.  |
|---------------------|----------------------|--|----------------------------|--|-------------------------------|-------|
|                     | 1909                 |  |                            |  |                               | \$    |
| 5866                | June 8               | Thomas Cliffe.....                     | Mate.....                  | Victoria, B.C. ....  | Victoria, B.C. ....           | 6 00  |
| 5867                | " 8                  | William Henry Wilson..                 | " .....                    | Hamilton, Ont., ....                                       | Ottawa, Ont., ....            | 6 00  |
| 5868                | " 8                  | Robert Fullerton.....                  | Master.....                | Toronto, Ont. ....   | Toronto, Ont., ..             | 15 00 |
| 5869                | " 8                  | Israel Desfarge.....                   | Master, (temp. cert.)..... | Calumet, P.Q. ....   | Ottawa, Ont. ....             | 5 00  |
| 5870                | " 8                  | Thomas Christinson.....                | Master, (temp. cert.)..... | Wako, Ont. ....  | Kenora, Ont. ....             | 5 00  |
| 5871                | " 18                 | Joseph Arthur Larochele                | Master..                   | Mattawa, Ont. ....   | Temiscaming, Que              | 15 00 |
| 5872                | " 18                 | Ritchie Roy Spicer.....                | " .....                    | Vancouver, B.C. ....                                       | Vancouver, B.C. ...           | 15 00 |
| 5873                | " 18                 | George W. Blanchard...                 | " .....                    | Toronto, Ont. ....   | Toronto, Ont., ...            | 15 00 |
| 5874                | " 18                 | Thomas Robinson.....                   | " .....                    | Kenora, Ont. ....  | West Selkirk, Man             | 15 00 |
| 5875                | " 18                 | George D. de Teissier<br>Prevost. .... | Mate.....                  | Vancouver, B.C. ....<br>St. Roch des Aulnets,<br>P.Q. .... | Vancouver, B.C. ..            | 6 00  |
| 5876                | " 18                 | David Bourgault.....                   | Master.....                | Wako, Ont. ....  | Ottawa, Ont. ....             | 15 00 |
| 5877                | " 18                 | Napoleon Roy.....                      | Master, (temp. cert.)..... | Windsor, Ont. ....   | Kenora, Ont. ....             | 5 00  |
| 5878                | July 14              | William P. Tinkiss.....                | Mate.....                  | Uffington Village, Ont.                                    | Ottawa, Ont. ....             | 6 00  |
| 5879                | " 14                 | James Russell.....                     | Master, (temp. cert.)..... | Wyebridge Village, Ont                                     | Collingwood, Ont.             | 5 00  |
| 5880                | " 14                 | Herbert Mose Parent.....               | Mate.....                  | Windsor, Ont. ....   | Windsor, Ont. ....            | 6 00  |
| 5881                | " 14                 | Cyril Godfrey Hilder.....              | Master.....                | Port Haney, B.C. ....                                      | Vancouver, B.C. ..            | 15 00 |
| 5882                | July 14              | John Franklin Edwards.                 | Master..                   | Vancouver, B.C. ....                                       | Vancouver, B.C. ...           | 15 00 |
| 5883                | " 14                 | Hugh Harry Bostock.....                | Master, (temp. cert.)..... | West Selkirk, Man. ..                                      | West Selkirk, Man.            | 15 00 |
| 5884                | " 14                 | Horatio H. Brannen.....                | Master.....                | Clark's Harbour, N.S..                                     | Yarmouth, N.S. ...            | 15 00 |
| 5885                | " 14                 | Donald Russell Fraser.                 | Mate.....                  | Rosseau, Ont. ....   | Collingwood, Ont.             | 6 00  |
| 5886                | " 14                 | Robert R. Russell.....                 | Master.....                | Digby, N.S. ....   | Yarmouth, N.S. ...            | 15 00 |
| 5887                | " 14                 | Walter Robson.....                     | " .....                    | Vancouver, B.C. ....                                       | Vancouver, B.C. ...           | 15 00 |
| 5888                | " 14                 | " .....                                | Mate.....                  | " .....  | Vancouver, B.C. ...           | 6 00  |
| 5889                | " 14                 | William Henry Hall.....                | Master.....                | Winnipeg, Man. ....  | Selkirk, Man. ....            | 15 00 |
| 5890                | " 14                 | Daniel M. MacDonald....                | " .....                    | South Gut C.B., N.S..                                      | North Sydney, N.S.            | 15 00 |
| 5891                | " 14                 | James Laurence.....                    | Mate.....                  | Vancouver, B.C. ....                                       | Vancouver, B.C. ...           | 6 00  |
| 5892                | " 14                 | Peter Boyer.....                       | Master, (temp. cert.)..... | Penetang, Ont. ....  | Collingwood, Ont.             | 5 00  |
| 5893                | " 19                 | Angus Rudolph.....                     | Master.....                | Halifax, N.S. ....   | Halifax, N.S. ....            | 15 00 |
| 5894                | " 23                 | Nelson W. Miner.....                   | Mate.....                  | Dillonport, Ont. ....                                      | Collingwood, Ont..            | 6 00  |
| 5895                | Aug. 4               | Alva Morley Snider.....                | Master.....                | Vancouver, B.C. ....                                       | Vancouver, B.C. ...           | 15 00 |
| 5896                | " 4                  | Henry V. Matthews.....                 | " .....                    | Lockport, N.S. ....  | Yarmouth, N.S. ...            | 15 00 |
| 5897                | " 4                  | Francis Thomas Dodds..                 | Master, (temp. cert.)..... | Kenora, Ont. ....  | Kenora, Ont. ....             | 5 00  |
| 5898                | " 4                  | Joseph Octave Blondin..                | Master.....                | Haileybury, Ont. ....                                      | Ottawa, Ont. ....             | 15 00 |
| 5899                | " 4                  | Alexander McLean.....                  | " .....                    | Loggieville, N.B. ....                                     | Charlottetown,<br>P.E.I. .... | 15 00 |
| 5900                | " 7                  | Robert Alex. MacLean..                 | " .....                    | Chatham, N.B. ....   | Charlottetown,<br>P.E.I. .... | 15 00 |
| 5901                | " 13                 | Robert Thomas Drever..                 | Mate.....                  | Vancouver, B.C. ....                                       | Vancouver, B.O. ...           | 6 00  |
| 5902                | " 13                 | Cyril H. McAlpine.....                 | " .....                    | Winnipeg, Man. ....  | West Selkirk, Man             | 6 00  |
| 5903                | " 13                 | John Morel, Jr.....                    | Master, (temp. cert.)..... | St. Henri de Taillon,<br>P.Q. ....                         | Montreal, P.Q. ....           | 5 00  |
| 5904                | " 13                 | Charles E. Dawson.....                 | Master, (temp. cert.)..... | Montreal, P.Q. ....  | " .....                       | 5 00  |
| 5905                | " 13                 | Frederick H. Hickey.....               | Master, (temp. cert.)..... | Peterboro, Ont. ....                                       | Collingwood, Ont..            | 5 00  |
| 5906                | " 13                 | Wallace H. Smith.....                  | Master.....                | Parrsboro, N.S. ....                                       | Yarmouth, N.S. ...            | 15 00 |
| 5907                | " 23                 | Job A. Crowell.....                    | " .....                    | Clark's Harbour, N.S..                                     | " .....                       | 15 00 |
| 5908                | Sept. 9              | Henry Hingley.....                     | " .....                    | Port Hillford, N.S. ...                                    | Halifax, N.S. ....            | 15 00 |
| 5909                | " 9                  | Arthur Goreham.....                    | " .....                    | Woods Harbour, N.S..                                       | Yarmouth, N.S. ...            | 15 00 |
| 5910                | " 9                  | Gilbert A. Ward.....                   | " .....                    | Sapperton, B.C. ....                                       | Vancouver, B.C. ...           | 15 00 |
| 5911                | " 9                  | John Baillies.....                     | Mate.....                  | Vancouver, B.C. ....                                       | " .....                       | 6 00  |
| 5912                | " 9                  | John James McPhee.....                 | Master.....                | Victoria, B.C. ....  | Victoria, B.C. ....           | 15 00 |
| 5913                | " 9                  | Auston Christian.....                  | " .....                    | Halifax, N.S. ....   | Yarmouth, N.S. ...            | 15 00 |
| 5914                | " 9                  | Edouard Valois.....                    | " .....                    | St. Ignace de Loyola,<br>P.Q. ....                         | Ottawa, Ont. ....             | 15 00 |
| 5915                | " 9                  | James Carmichael.....                  | " .....                    | raeside, Ont. ....   | " .....                       | 15 00 |



LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                    | Grade.                | Address.                    | Where examination was passed. | Fee.  |
|---------------------|----------------------|--------------------------|-----------------------|-----------------------------|-------------------------------|-------|
|                     | 1909.                |                          |                       |                             |                               | \$    |
| 5916                | Sept. 9              | Jean Bapt. Belanger....  | Master.....           | Mattawa, Ont.....           | Ottawa, Ont.....              | 15 00 |
| 5917                | " 9                  | Ithamar Stephens.....    | " .....               | Lockeport, N.S.....         | Yarmouth, N.S....             | 15 00 |
| 5918                | " 9                  | William McPhee.....      | " .....               | Sambro, N.S.....            | Halifax, N.S.....             | 15 00 |
| 5919                | Oct. 6               | William Dexter Pyke....  | Master, (temp. cert.) | O'Brien.....                | Kenora, Ont.....              | 5 00  |
| 5920                | " 6                  | James M. Shackleton..    | Master, (temp. cert.) | Dryden, Ont.....            | " .....                       | 5 00  |
| 5921                | " 6                  | Robert Henry Trachsler.  | Mate.....             | Vancouver, B.C.....         | Victoria, B.C.....            | 6 00  |
| 5922                | " 6                  | Harry Stewart Hughes..   | Master.....           | Victoria, B.C.....          | Vancouver, B.C....            | 15 00 |
| 5923                | " 6                  | Thomas H. Johnston....   | " .....               | Port Dalhousie, Ont..       | Windsor, Ont.....             | 15 00 |
| 5924                | " 6                  | Auguste Langelier.....   | Mate.....             | L'Islet, P.Q.....           | Montreal, P.Q.....            | 6 00  |
| 5925                | " 6                  | Henry A. McCarthy.....   | Master.....           | Arrowhead, B.C.....         | Victoria, B.C.....            | 15 00 |
| 5926                | " 6                  | Edward Keans.....        | " .....               | Port Wade, N.S.....         | Yarmouth, N.S....             | 15 00 |
| 5927                | " 8                  | Simeon Wooden.....       | Mate.....             | Halifax, N.S.....           | Halifax, N.S.....             | 6 00  |
| 5928                | " 11                 | John Linton Tough.....   | " .....               | Vancouver, B.C.....         | Vancouver, B.C....            | 6 00  |
| 5929                | " 22                 | William E. Cates.....    | Master.....           | Vancouver, B.C.....         | Victoria, B.C.....            | 15 00 |
| 5930                | " 22                 | Robbie Hebert Frellick.. | " .....               | Hunt's Point, N.S....       | Halifax, N.S.....             | 15 00 |
| 5931                | " 22                 | Frank K. Crosby.....     | " .....               | Yarmouth, N.S.....          | Yarmouth, N.S....             | 15 00 |
| 5932                | " 22                 | Herbert N. McMaster..    | Mate.....             | Toronto, Ont.....           | Montreal, P.Q.....            | 6 00  |
| 5933                | Nov. 3               | William L. MacLeod.....  | " .....               | Halifax, N.S.....           | North Sydney, N.S.            | 6 00  |
| 5934                | " 3                  | James Thoburn.....       | Master.....           | East Jordan, N.S....        | Halifax, N.S.....             | 15 00 |
| 5935                | " 3                  | James Schmeisser.....    | Mate.....             | Middle La Have, N.S.        | Yarmouth, N.S....             | 6 00  |
| 5936                | " 3                  | Gabriel D. Pentz.....    | " .....               | West La Have, N.S....       | " .....                       | 6 00  |
| 5937                | " 3                  | John William Meyer....   | " .....               | Orme Gardens, England       | Vancouver, B.C....            | 6 00  |
| 5938                | Dec. 14              | Nils Sture Nilson.....   | Master.....           | Victoria, B.C.....          | Victoria, B.C.....            | 15 00 |
| 5939                | " 14                 | Donald McKay.....        | Mate.....             | Caribou, Y.T.....           | " .....                       | 6 00  |
| 5940                | " 14                 | Alfred Elmer Lewis....   | " .....               | Victoria, B.C.....          | " .....                       | 6 00  |
| 5941                | " 14                 | Louis P. D'Entremont..   | Master.....           | West Pubnico, N.S....       | Yarmouth, N.S....             | 15 00 |
| 5942                | " 14                 | James Lowe.....          | " .....               | Clark's Harbour, N.S.       | " .....                       | 15 00 |
| 5943                | " 14                 | Webster Hamilton.....    | " .....               | Lower Argyle, N.S....       | " .....                       | 15 00 |
| 5944                | " 14                 | William B. Smith.....    | " .....               | West Head, N.S.....         | " .....                       | 15 00 |
| 5945                | " 14                 | Wm. Francis Howell....   | " .....               | Thorold, Ont.....           | Ottawa, Ont.....              | 15 00 |
| 5946                | " 14                 | William John Boyce....   | Master.....           | Nanaimo, B.C.....           | Victoria, B.C.....            | 15 00 |
| 5947                | " 16                 | Eddie Legault.....       | " .....               | Ste. Anne de Bellevue, P.Q. | Montreal, P.Q.....            | 15 00 |
|                     | 1910.                |                          |                       |                             |                               |       |
| 5948                | Jan. 18              | Edward H. McConkey..     | " .....               | Barrie, Ont.....            | Windsor, Ont.....             | 15 00 |
| 5949                | " 18                 | Francis Thomas Sinnott.  | " .....               | Penetanguishene, Ont.       | " .....                       | 15 00 |
| 5950                | " 18                 | Stewart Bain English.... | " .....               | Little Current, Ont...      | Collingwood, Ont..            | 15 00 |
| 5951                | " 18                 | John Weston.....         | " .....               | Rexton, N.B.....            | Yarmouth, N.S....             | 15 00 |
| 5952                | " 18                 | Donat Laroche.....       | " .....               | Sorel, P.Q.....             | Montreal, P.Q.....            | 15 00 |
| 5953                | " 18                 | John M. Guild.....       | Mate.....             | Kingston, Ont.....          | " .....                       | 6 00  |
| 5954                | " 18                 | William Mainville.....   | Master.....           | Rockland, Ont.....          | " .....                       | 15 00 |
| 5955                | " 18                 | Barry Alban Sullivan.... | Mate.....             | Cornwall, Ont.....          | " .....                       | 6 00  |
| 5956                | " 18                 | Stanley Harris.....      | " .....               | Victoria, B.C.....          | Victoria, B.C.....            | 6 00  |
| 5957                | " 18                 | William English.....     | Master.....           | " .....                     | " .....                       | 15 00 |
| 5958                | " 18                 | James Arthur Goodwin..   | " .....               | Toronto, Ont.....           | Toronto, Ont.....             | 15 00 |
| 5959                | " 18                 | Harry Leaney.....        | Mate.....             | Owen Sound, Ont....         | Windsor, Ont.....             | 6 00  |
| 5960                | " 18                 | William Carson.....      | Master.....           | Midland, Ont.....           | " .....                       | 15 00 |
| 5961                | " 18                 | Robert Orr McLeod.....   | Mate.....             | Pictou, Ont.....            | Toronto, Ont.....             | 6 00  |
| 5962                | " 18                 | Charles Mahoney.....     | " .....               | Elgin, Ont.....             | Montreal, P.Q.....            | 6 00  |
| 5963                | " 18                 | John Fraser.....         | Master (temp. cert.)  | Parry Harbour, Ont..        | Collingwood, Ont..            | 5 00  |
| 5964                | Feb. 14              | Ernest W. Baker.....     | Mate.....             | Batteau, Ont.....           | " .....                       | 6 00  |
| 5965                | " 14                 | Ernest F. Raeburn.....   | " .....               | Soo Michigan.....           | " .....                       | 6 00  |
| 5966                | " 14                 | Frank Ironside.....      | " .....               | Collingwood, Ont....        | " .....                       | 6 00  |
| 5967                | " 14                 | John W. McCannel.....    | Master.....           | " .....                     | " .....                       | 15 00 |
| 5968                | " 14                 | Joshua G. Corson.....    | Mate.....             | " .....                     | " .....                       | 6 00  |
| 5969                | " 14                 | William F. Bagley.....   | " .....               | " .....                     | " .....                       | 6 00  |
| 5970                | " 14                 | Theodore S. Seaman....   | Master (temp. cert.)  | Sauble Falls, Ont.....      | " .....                       | 5 00  |
| 5971                | " 14                 | Neil Samuel Livingstone  | Master.....           | Collingwood, Ont....        | " .....                       | 15 00 |
| 5972                | " 14                 | John H. Hudson.....      | Mate.....             | Midland, Ont.....           | " .....                       | 6 00  |
| 5973                | " 14                 | John Lawrence.....       | Master.....           | Vancouver, B.C.....         | Vancouver, B.C....            | 15 00 |

## SESSIONAL PAPER No. 21

LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                       | Grade.      | Address.                    | Where examination was passed. | Fee.  |
|---------------------|----------------------|-----------------------------|-------------|-----------------------------|-------------------------------|-------|
|                     | 1910.                |                             |             |                             |                               | \$    |
| 5974                | Jan. 14              | Austin Levy.....            | Master..... | New Westminster, B.C.       | Vancouver, B.C....            | 15 00 |
| 5975                | " 14                 | " .....                     | Mate.....   | " .....                     | " .....                       | 6 00  |
| 5976                | " 14                 | Fred Groth.....             | " .....     | Vancouver, B.C.....         | " .....                       | 6 00  |
| 5977                | " 14                 | Joseph E. Bernier. ....     | Master..... | St. Henri, Montreal, P.Q.   | Montreal, P.Q....             | 15 00 |
| 5978                | " 14                 | Arthur John Gibson....      | " .....     | Aylmer, P.Q.....            | " .....                       | 15 00 |
| 5979                | " 14                 | Jean Bapt. Couillard....    | " .....     | Beauharnois, P.Q....        | " .....                       | 15 00 |
| 5980                | " 14                 | Raoul Chatel.....           | Mate.....   | St. Zotique, P.Q....        | " .....                       | 6 00  |
| 5981                | " 14                 | Onesiphore Scherrer....     | " .....     | Cape St. Ignace, P.Q..      | " .....                       | 6 00  |
| 5982                | " 14                 | Alcide Caron.....           | " .....     | L'Islet, P.Q.....           | " .....                       | 6 00  |
| 5983                | " 14                 | Amedee Caron.....           | " .....     | " .....                     | " .....                       | 6 00  |
| 5984                | " 14                 | Donat Charland.....         | Master..... | Sorel, P.Q.....             | " .....                       | 15 00 |
| 5985                | " 14                 | Stephen Patrick Ahern..     | Mate.....   | Port Dalhousie, Ont..       | Toronto, Ont.....             | 6 00  |
| 5986                | " 14                 | Thomas Allen.....           | Master..... | Toronto, Ont.....           | " .....                       | 15 00 |
| 5987                | " 14                 | William Stalker.....        | Mate.....   | Penetang, Ont.....          | " .....                       | 6 00  |
| 5988                | " 14                 | Samuel Pearson.....         | Master..... | Peterborough, Ont....       | " .....                       | 15 00 |
| 5989                | " 14                 | William Copperthwaite.      | " .....     | " .....                     | " .....                       | 15 00 |
| 5990                | " 14                 | Samuel McCaig.....          | " .....     | Toronto, Ont.....           | " .....                       | 15 00 |
| 5991                | " 14                 | Emanuel Ford.....           | " .....     | Channel, Newfoundl'd.       | North Sydney, N.S.            | 15 00 |
| 5992                | " 14                 | Severin Vignault.....       | " .....     | Magdalen Island, P.Q.       | Yarmouth, N.S....             | 15 00 |
| 5993                | " 14                 | Colin McLellan.....         | Mate.....   | Maitland, N.S.....          | " .....                       | 6 00  |
| 5994                | " 14                 | Rufus J. Belyea.....        | Master..... | St. John, N.B.....          | " .....                       | 15 00 |
| 5995                | " 14                 | Alfred Cundick.....         | Mate.....   | Sombra, Ont.....            | Windsor, Ont.....             | 6 00  |
| 5996                | " 14                 | Henry Shiltroth.....        | " .....     | Owen Sound, Ont.....        | " .....                       | 6 00  |
| 5997                | " 14                 | Henry I. Matthews.....      | Master..... | Lakeport, Ont.....          | " .....                       | 15 00 |
| 5998                | " 14                 | John Bernard.....           | " .....     | Amherstburg, Ont....        | " .....                       | 15 00 |
| 5999                | " 14                 | Frank Charles Granville.    | Mate.....   | Chatham, Ont.....           | " .....                       | 6 00  |
| 6100                | " 14                 | Robert Pyette.....          | Master..... | Owen Sound, Ont.....        | " .....                       | 15 00 |
| 6101                | " 14                 | Henry Readfearn.....        | " .....     | Lakeport, Ont.....          | " .....                       | 15 00 |
| 6102                | " 14                 | David Henry Porter.....     | Mate.....   | Allenford, Ont.....         | " .....                       | 6 00  |
| 6103                | " 14                 | Robert R. Elder.....        | " .....     | Port Lambton, Ont....       | " .....                       | 6 00  |
| 6104                | " 14                 | Joseph Bishop.....          | " .....     | Owen Sound, Ont.....        | " .....                       | 6 00  |
| 6105                | " 14                 | Frank A. McMann.....        | Master..... | Thorold, Ont.....           | Collingwood, Ont..            | 15 00 |
| 6106                | " 14                 | William F. Bristow.....     | " .....     | Napanee, Ont.....           | " .....                       | 15 00 |
| 6107                | " 14                 | Hugh Stanley McLellan.      | " .....     | Vancouver, B.C.....         | Vancouver, B.C....            | 15 00 |
| 6108                | " 14                 | Wm. Harvey Alexaner....     | " .....     | " .....                     | " .....                       | 15 00 |
| 6109                | " 14                 | Emanuel Leduc.....          | Mate.....   | Valleyfield, P.Q....        | Ottawa, Ont.....              | 6 00  |
| 6110                | Feb. 22              | Alexander Wilson.....       | Master..... | Sidney, B.C.....            | Victoria, B.C.....            | 15    |
| 6111                | " 22                 | Alexander F. McLennan       | " .....     | Midland, Ont.....           | Collingwood, Ont..            | 15    |
| 6112                | " 22                 | John William S. Rutherford. | " .....     | Wiarton, Ont.....           | " .....                       | 15    |
| 6113                | " 22                 | Alfred J. Northcott....     | Mate.....   | Collingwood, Ont.....       | " .....                       | 6     |
| 6114                | " 22                 | Beecher P. Powell.....      | " .....     | Yarmouth, N.S.....          | Yarmouth, N.S....             | 6     |
| 6115                | " 22                 | George W. Spears.....       | " .....     | Halifax, N.S.....           | " .....                       | 6     |
| 6116                | " 22                 | Wilbert Beatty.....         | " .....     | Midland, Ont.....           | Collingwood, Ont..            | 6     |
| 6117                | " 22                 | Ruben D. Flower.....        | Master..... | Gibson, N.B.....            | Yarmouth, N.S....             | 15    |
| 6118                | " 22                 | Oscar Patterson.....        | Mate.....   | Toronto, Ont.....           | Toronto, Ont.....             | 6     |
| 6119                | " 22                 | George McIver.....          | Master..... | Port Arthur, Ont....        | " .....                       | 15    |
| 6120                | " 22                 | Robert Brechin.....         | Mate.....   | Bruce Mines, Ont....        | " .....                       | 6     |
| 6121                | " 22                 | Charles Ross.....           | Master..... | Dunville, Ont.....          | " .....                       | 15    |
| 6122                | " 22                 | John Mullen.....            | Mate.....   | Kingston, Ont.....          | Montreal, P.Q....             | 6     |
| 6123                | " 22                 | Thomas Houde.....           | Master..... | Les Fonds St. Antoine, P.Q. | " .....                       | 15    |
| 6124                | " 22                 | " .....                     | Mate.....   | " .....                     | " .....                       | 1     |
| 6125                | " 22                 | David Lefave.....           | Master..... | Garden Island, Ont...       | " .....                       | 1     |
| 6126                | " 22                 | Joseph Forcier.....         | " .....     | Montreal, P.Q.....          | " .....                       | 1     |
| 6127                | " 22                 | Joseph Brais.....           | Mate.....   | Beauharnois, P.Q....        | " .....                       | 1     |
| 6128                | " 22                 | Phidine Fortin.....         | " .....     | L'Islet, P.Q.....           | " .....                       | 1     |
| 6129                | " 22                 | Alexander Cameron.....      | " .....     | Parkhill, Ont.....          | Windsor, Ont.....             | 1     |
| 6130                | " 22                 | Archie Hogue.....           | " .....     | Breekeholm, Ont....         | " .....                       | 1     |
| 6131                | " 22                 | Allen Fraser.....           | " .....     | Vancouver, B.C.....         | Vancouver, B.C....            | 1     |
| 6132                | Mar. 7               | Alfred E. Lewis.....        | Master..... | Victoria, B.C.....          | Victoria, B.C.....            | 1     |
| 6133                | " 7                  | Samuel H. Balcom.....       | " .....     | " .....                     | " .....                       | 1     |
| 6134                | " 7                  | John Isbister.....          | Mate.....   | Foster Pier, B.C.....       | " .....                       | 1     |

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LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                   | Grade.                | Address.                     | When examination was passed. | Fee.    |
|---------------------|----------------------|-------------------------|-----------------------|------------------------------|------------------------------|---------|
|                     | 1910.                |                         |                       |                              |                              | \$ cts. |
| 6135                | March 7              | Edward Walter Gray      | Master.               | Victoria, B.C.               | Victoria, B. C.              | 15      |
| 6136                | " 7                  | Edward L. Knight        | "                     | Collingwood, Ont.            | Collingwood, Ont.            | 15      |
| 6137                | " 7                  | Frank B. Cameron        | Mate.                 | "                            | "                            | 6       |
| 6138                | " 7                  | James C. Putman         | "                     | Sombra, Ont.                 | Windsor, Ont.                | 6       |
| 6139                | " 7                  | Walter S. Campbell      | Master.               | Owen Sound, Ont.             | "                            | 15      |
| 6140                | " 7                  | Nathaniel Barrett       | "                     | "                            | "                            | 15      |
| 6141                | " 7                  | William C. McLaren      | "                     | Port Dalhousie, Ont.         | "                            | 15      |
| 6142                | " 7                  | Fred Kent               | Mate.                 | Owen Sound, Ont.             | "                            | 6       |
| 6143                | " 7                  | Ulric Blais             | Master.               | Lanoraie, P.Q.               | Montreal, P.Q.               | 15      |
| 6144                | " 7                  | Zenon Gosselin          | Mate.                 | Montreal, P.Q.               | "                            | 6       |
| 6145                | " 7                  | Marcedonne Cournoyer    | Master.               | "                            | "                            | 15      |
| 6146                | " 7                  | David Combe             | Mate.                 | Vancouver, B.C.              | Vancouver, B.C.              | 6       |
| 6147                | " 7                  | James A. Hughes         | Master.               | Charlottetown, P.E.I.        | Charlottetown, P.E.I.        | 15      |
| 6148                | " 7                  | James S. Crouse         | Mate.                 | Conquevall Bank, N.S.        | Lunenburg, N.S.              | 6       |
| 6149                | " 7                  | James B. Poole          | "                     | North Sydney, N.S.           | North Sydney, N.S.           | 6       |
| 6150                | " 7                  | Leopold Lavigne         | Master.               | Ottawa, Ont.                 | Ottawa, Ont.                 | 15      |
| 6151                | " 7                  | Otto Johnson            | "                     | Toronto, Ont.                | Toronto, Ont.                | 15      |
| 6152                | " 7                  | John William Redner     | "                     | Belleville, Ont.             | "                            | 15      |
| 6153                | " 7                  | David W. Burke          | "                     | Penetanguishine, Ont.        | "                            | 15      |
| 6154                | " 7                  | Charles H. Casselman    | Mate.                 | Morrisburg, Ont.             | "                            | 6       |
| 6155                | " 7                  | Harry B. Hunt           | "                     | Gore Bay, Ont.               | "                            | 6       |
| 6156                | " 7                  | William J. Bennett      | Master.               | Sault Ste. Marie, Ont.       | "                            | 15      |
| 6157                | " 7                  | James A. Fisher         | "                     | Gore Bay, Ont.               | "                            | 15      |
| 6158                | " 7                  | Frederick F. Foote      | Mate.                 | Fergus, Ont.                 | "                            | 6       |
| 6159                | " 7                  | Charles S. Niece        | Master.               | Toronto, Ont.                | "                            | 15      |
| 6160                | " 7                  | Albert H. Foote         | Mate.                 | Fergus, Ont.                 | "                            | 6       |
| 6161                | April 6              | Salathiel Herman        | Master.               | Lunenburg, N. S.             | Halifax, N.S.                | 15 00   |
| 6162                | " 6                  | Robert S. Orchard       | Mate.                 | St. John, N. B.              | Yarmouth, N. S.              | 6 00    |
| 6163                | " 6                  | John Strong Denton      | "                     | Port Dalhousie, Ont.         | Windsor, Ont.                | 6 00    |
| 6164                | " 6                  | Evan James              | Master.               | Vancouver, B. C.             | Vancouver, B. C.             | 15 00   |
| 6165                | " 6                  | James L. Whyte          | "                     | "                            | "                            | 15 00   |
| 6166                | " 6                  | Joseph E. Desloges      | " (temp. certificate. | Ottawa, Ont.                 | Ottawa, Ont.                 | 5 00    |
| 6167                | " 6                  | Phillipe Garneau        | Mate.                 | Lotbinière, P. Q.            | "                            | 6 00    |
| 6168                | " 6                  | Hugh St. Clair Cameron  | "                     | Vancouver, B. C.             | Vancouver, B. C.             | 6 00    |
| 6169                | " 6                  | Jean Benoit Deslauriers | Master.               | St. Rock, P. Q.              | Ottawa, Ont.                 | 15 00   |
| 6170                | " 6                  | John C. Gilchrist       | Mate.                 | St. John, N. B.              | Yarmouth, N. S.              | 6 00    |
| 6171                | " 6                  | Henry William Calhoun   | Master.               | St. Martins, N. B.           | "                            | 15 00   |
| 6172                | " 6                  | Gordon S. Wright        | "                     | Toronto, Ont.                | Windsor, Ont.                | 15 00   |
| 6173                | " 6                  | Fred J. Burke           | "                     | Midland, Ont.                | "                            | 15 00   |
| 6174                | " 6                  | Andrew Robson           | Mate.                 | Victoria, B. C.              | Victoria, B. C.              | 6 00    |
| 6175                | " 6                  | Joseph E. Houghton      | "                     | Collingwood                  | Collingwood, Ont.            | 6 00    |
| 6176                | " 6                  | Albert Beatty           | "                     | Midland, Ont.                | "                            | 6 00    |
| 6177                | " 6                  | Edouard Francœur        | Master.               | Ste. Anne de Bellevue, P. Q. | Ottawa, Ont.                 | 15 00   |
| 6178                | " 6                  | George Ford             | Mate.                 | Vancouver, B. C.             | Vancouver, B. C.             | 6 00    |
| 6179                | " 6                  | Alfred Edward Fraser    | Master.               | Keewatin, Ont.               | W. Selkirk, Man.             | 15 00   |
| 6180                | " 6                  | Israel Desforge         | " (temp. certificate. | Calumet, P. Q.               | Ottawa, Ont.                 | 5 00    |
| 6181                | " 6                  | Conrad Myers            | Master.               | Prince Rupert, B. C.         | Vancouver, B. C.             | 15 00   |
| 6182                | " 6                  | John Sears Raymond      | Mate.                 | Dawson, Y. T.                | "                            | 6 00    |
| 6183                | " 6                  | John Buffet             | "                     | Sydney, C. B., N. S.         | North Sydney, C. B., N. S.   | 6 00    |
| 6184                | " 6                  | James Dustan            | Master.               | West Toronto, Ont.           | Collingwood, Ont.            | 15 00   |
| 6185                | " 6                  | Theophilus A. Stewart   | Mate.                 | Charlottetown, P.E.I.        | Charlottetown, P. E. I.      | 6 00    |
| 6186                | " 6                  | Haakon Frederickson     | Master.               | Vancouver, B. C.             | Vancouver, B. C.             | 15 00   |
| 6187                | " 6                  | Harry Archibald Flick   | "                     | Halifax, N. S.               | Halifax, N. S.               | 15 00   |
| 6188                | " 6                  | George Magar            | "                     | Prince Rupert                | Vancouver, B. C.             | 15 00   |
| 6189                | " 6                  | John Birkland           | "                     | Victoria, B. C.              | Victoria, B. C.              | 15 00   |
| 6190                | " 6                  | Thomas James Jackman    | "                     | "                            | "                            | 15 00   |
| 6191                | " 6                  | Joseph Parker Bucey     | "                     | "                            | "                            | 15 00   |
| 6192                | " 6                  | Alfred Brown            | "                     | Clark's Harbour, N. S.       | Yarmouth, N. S.              | 15 00   |



## SESSIONAL PAPER No. 21

LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                     | Grade.                   | Address.                  | Where examination was passed.  | Fee.  |
|---------------------|----------------------|---------------------------|--------------------------|---------------------------|--------------------------------|-------|
|                     | 1910.                |                           |                          |                           |                                | \$    |
| 6193                | April 6              | Arthur O'Neil.....        | Master.....              | Indian Harbour, N.S..     | Yarmouth, N.S....              | 15 00 |
| 6194                | " 6                  | Charles Tachereau Beard   | Mate.....                | Ottawa, Ont.....          | Halifax, N.S.....              | 6 00  |
| 6195                | " 6                  | John Laurence Bottrill..  | Master.....              | Vancouver, B.C.....       | Vancouver, B.C....             | 15 00 |
| 6196                | " 6                  | Joseph Harris Daball....  | " (tem. cert.)           | Collingwood, Ont.....     | Collingwood, Ont....           | 5 00  |
| 6197                | " 6                  | Charles Addison Gerow..   | ".....                   | Burk's Falls, Ont.....    | ".....                         | 15 00 |
| 6198                | " 6                  | Thomas Kennedy.....       | ".....                   | ".....                    | ".....                         | 15 00 |
| 6199                | " 6                  | George Edward Dicks....   | Mate.....                | North Sydney, N.S....     | North Sydney, N.S..            | 6 00  |
| 6200                | " 6                  | Charles A. Gardner.....   | Master.....              | New Westminster, B.C.     | Victoria, B.C.....             | 15 00 |
| 6201                | " 6                  | Arthur Swim.....          | Mate.....                | Lockeport, N.S.....       | Yarmouth, N.S....              | 6 00  |
| 6202                | " 6                  | Robert Stanley Fraser.... | ".....                   | Keewatin, Ont.....        | West Selkirk, Man..            | 6 00  |
| 6203                | " 6                  | Ben. Edward Wright....    | Master.....              | Aitkens Ferry, P.E.I..    | Charlottetown, P.<br>E.I.....  | 15 00 |
| 6204                | " 6                  | Wilham Henry Lowry....    | Mate.....                | Walkerville, Ont.....     | Windsor, Ont.....              | 6 00  |
| 6205                | " 6                  | John A. Martin.....       | ".....                   | Sault Ste Marie, Ont..    | ".....                         | 6 00  |
| 6206                | " 6                  | Allan Hains.....          | ".....                   | Richibucto, N.B.....      | Yarmouth, N.S....              | 6 00  |
| 6207                | " 6                  | Joshua D. Colwell.....    | ".....                   | Cambridge, N.B.....       | ".....                         | 6 00  |
| 6208                | " 6                  | Joseph Philp.....         | Master.....              | Port Hope, Ont.....       | Toronto, Ont.....              | 15 00 |
| 6209                | " 6                  | Louis Bethune.....        | ".....                   | Bracebridge, Ont.....     | ".....                         | 15 00 |
| 6210                | " 20                 | Harry Rich. Whitman....   | ".....                   | Victoria, B.C.....        | Victoria, B.C.....             | 15 00 |
| 6211                | " 20                 | Norman W. Thompson....    | Mate.....                | ".....                    | ".....                         | 6 00  |
| 6212                | " 20                 | Samuel Matheson.....      | ".....                   | Nelson, B.C.....          | Nelson, B.C.....               | 6 00  |
| 6213                | " 20                 | Alexander Thompson....    | ".....                   | Arrow Head, B.C.....      | ".....                         | 6 00  |
| 6214                | " 20                 | Zatigue Perrault.....     | Master.....              | Lanoraie, P.Q.....        | Montreal, P.Q.....             | 15 00 |
| 6215                | " 20                 | Eugene Fortin.....        | Mate.....                | L'Islet, P.Q.....         | ".....                         | 6 00  |
| 6216                | " 20                 | Alphonse Lepine.....      | ".....                   | Pointe Claire, P.Q....    | ".....                         | 6 00  |
| 6217                | " 20                 | Albert Labadie.....       | Master.....              | St. Joseph de Levis, P.Q. | ".....                         | 15 00 |
| 6218                | " 20                 | Gustave Lefebvre.....     | ".....                   | Pointe Claire, P.Q....    | ".....                         | 15 00 |
| 6219                | " 20                 | William John Murphy....   | Mate.....                | Kingston, Ont.....        | ".....                         | 6 00  |
| 6220                | " 20                 | John McKenzie.....        | Master.....              | Bayble, Scotland....      | Port Arthur, Ont....           | 15 00 |
| 6221                | " 20                 | Edmond Desmarais.....     | ".....                   | Sorel, P.Q.....           | Ottawa, Ont.....               | 15 00 |
| 6222                | " 20                 | Bruce Pringle.....        | Mate.....                | Temiskaming, P.Q....      | ".....                         | 6 00  |
| 6223                | " 20                 | James Alex. Menagh.....   | ".....                   | Smith Falls, Ont.....     | ".....                         | 6 00  |
| 6224                | " 20                 | William Henry West.....   | ".....                   | Port Arthur, Ont.....     | Port Arthur, Ont....           | 6 00  |
| 6225                | " 20                 | Laurence Budreau.....     | Mate.....                | Rainy River, Ont.....     | Rainy River, Ont....           | 6 00  |
| 6226                | " 20                 | Joseph E. Budreau.....    | Master.....              | ".....                    | ".....                         | 15 00 |
| 6227                | " 20                 | Henry Gehl.....           | Mate.....                | Port Arthur, Ont.....     | Port Arthur, Ont....           | 6 00  |
| 6228                | " 20                 | Harry Friday.....         | Master.....              | ".....                    | ".....                         | 15 00 |
| 6229                | " 20                 | Alexander Fader.....      | ".....                   | ".....                    | ".....                         | 15 00 |
| 6230                | " 20                 | John Quick.....           | ".....                   | Rainy River, Ont.....     | Rainy River, Ont....           | 15 00 |
| 6231                | " 20                 | Hermann Niclas.....       | ".....                   | Edmonton, Alta.....       | Edmonton, Alta....             | 15 00 |
| 6232                | " 20                 | Charles Irvine McNeill..  | Mate.....                | Aitkens Ferry, P.E.I..    | Charlottetown, P.<br>E. I..... | 6 00  |
| 6233                | " 20                 | Henry Henderson.....      | Master, (temp.<br>cert.) | Dawson, Y. T.....         | Victoria, B.C.....             | 5 00  |
| 6234                | " 20                 | William A. Murphy.....    | Master.....              | Halifax, N.S.....         | Yarmouth, N.S....              | 15 00 |
| 6235                | " 20                 | Arthur E. Englefield....  | Mate.....                | St. John, N.B.....        | ".....                         | 6 00  |
| 6236                | " 20                 | Daniel Joseph McDonald..  | ".....                   | Halifax, N.S.....         | Halifax, N.S.....              | 6 00  |
| 6237                | " 20                 | William P. Simpson.....   | Master.....              | Selkirk, Man.....         | West Selkirk, Man..            | 15 00 |
| 6238                | " 20                 | Charles Williams.....     | ".....                   | Sturgeon Falls, Ont...    | Toronto, Ont.....              | 15 00 |
| 6239                | " 20                 | James W. Sutherland....   | ".....                   | North Sydney, N.S....     | North Sydney, N.S..            | 15 00 |
| 6240                | " 20                 | John Dube.....            | ".....                   | Parry Sound, Ont.....     | Collingwood, Ont....           | 15 00 |
| 6241                | " 20                 | Walter Williston.....     | ".....                   | Chatham, N.B.....         | Halifax, N.S.....              | 15 00 |
| 6242                | May 2                | John Burns.....           | ".....                   | Haileybury, Ont.....      | Ottawa, Ont.....               | 15 00 |
| 6243                | " 2                  | John Cunningham.....      | " (temp.<br>cert.)       | Gaudette, P. Q.....       | ".....                         | 15 00 |
| 6244                | " 3                  | Stephen Carlson.....      | Mate.....                | Vancouver, B.C.....       | Vancouver, B.C....             | 6 00  |
| 6245                | " 3                  | Frederick George Mills..  | Master.....              | Toronto, Ont.....         | Toronto Ont.....               | 15 00 |
| 6246                | " 3                  | Thomas Watt Weir.....     | Mate.....                | Cushing, Que.....         | Montréal, P.Q.....             | 6 00  |
| 6247                | " 3                  | William Donaldson.....    | ".....                   | Thurso, Que.....          | Ottawa, Ont.....               | 6 00  |
| 6248                | " 3                  | John Shannon.....         | Master.....              | Prince Rupert, B.C....    | Vancouver, B.C....             | 15 00 |
| 6249                | " 3                  | John E. Doddridge.....    | ".....                   | ".....                    | ".....                         | 15 00 |
| 6250                | " 3                  | William Cook.....         | " (temp.<br>cert.)       | Grenville, Que.....       | Ottawa, Ont.....               | 5 00  |
| 6251                | " 3                  | William Edward Fairhall.. | Mate.....                | Bracebridge, Ont.....     | Collingwood, Ont....           | 6 00  |



LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                        | Grade.                | Address.                       | Where examination was passed. | Fee.  |
|---------------------|----------------------|------------------------------|-----------------------|--------------------------------|-------------------------------|-------|
|                     | 1910                 |                              |                       |                                |                               | \$    |
| 6252                | May 3                | Daniel Donald .....          | Master.....           | Vancouver, B.C.....            | Vancouver, B.C.....           | 15 00 |
| 6253                | " 3                  | David John Tyndall.....      | " .....               | Lions Head, Ont.....           | Collingwood, Ont.....         | 15 00 |
| 6254                | " 10                 | William Hurley.....          | " .....               | St. John, N.B.....             | Yarmouth, N.S.....            | 15 00 |
| 6255                | " 10                 | Axel Ingvald Larsen.....     | " .....               | Quebec, Que.....               | Montreal, P.Q.....            | 15 00 |
| 6256                | " 10                 | Alfred C. Robinson.....      | Mate.....             | Toronto, Ont.....              | " .....                       | 6 00  |
| 6257                | " 10                 | Samuel Roach.....            | Mate.....             | Eastern Harbour, N.S.....      | Yarmouth, N.S.....            | 6 00  |
| 6258                | " 10                 | Alexander R. Craigie.....    | Master.....           | Tobomory, Ont.....             | Collingwood, Ont.....         | 15 00 |
| 6259                | " 10                 | John Morel, Jr.....          | Master, (temp. cert.) | St. Henri de Taillon, P.Q..... | Montreal, P.Q.....            | 5 00  |
| 6260                | " 10                 | Francis Thomas Dodds.....    | " .....               | Kenora, Ont.....               | Kenora, Ont.....              | 5 00  |
| 6261                | " 10                 | Joseph Nadon.....            | " .....               | Montebello, P.Q.....           | Ottawa, Ont.....              | 5 00  |
| 6262                | " 10                 | Neil Maclean.....            | Mate.....             | Victoria, B.C.....             | Victoria, B.C.....            | 6 00  |
| 6263                | " 13                 | William W. Harding.....      | Master.....           | Lower St. Mary's, N.B.....     | St. John, N.B.....            | 15 00 |
| 6264                | " 13                 | Grover Cleveland Nason.....  | " .....               | Waasis Sunbury, N.B.....       | Yarmouth, N.S.....            | 15 00 |
| 6265                | " 13                 | Ralph Munroe.....            | " .....               | Sheet Harbour, N.S.....        | Yarmouth, N.S.....            | 15 00 |
| 6266                | " 19                 | Daniel James McAllister..... | Mate.....             | Peterboro, Ont.....            | Ottawa, Ont.....              | 6 00  |
| 6267                | " 19                 | Alexander Cameron.....       | Master.....           | St. Peters, C.B.....           | Yarmouth, N.S.....            | 15 00 |
| 6268                | " 19                 | George H. Brannon.....       | " .....               | Centreville, Cape Isld.....    | " .....                       | 15 00 |
| 6269                | " 19                 | Laurence Watt.....           | Mate.....             | Vancouver, B. C.....           | Vancouver, B.C.....           | 6 00  |
| 6270                | " 19                 | John Robertson.....          | " .....               | " .....                        | " .....                       | 6 00  |
| 6271                | " 19                 | William W. Burns.....        | Master.....           | Norton, N.B.....               | St. John, N.B.....            | 15 00 |
| 6272                | " 19                 | Daniel Apt.....              | " .....               | Westfield, N.B.....            | " .....                       | 15 00 |
| 6277                | " 19                 | Mansfield Barton.....        | " .....               | Campbellton, N.B.....          | Montreal, P.Q.....            | 15 00 |
| 6253                | " 26                 | Oscar Cameron.....           | " .....               | Victoria, B.C.....             | Victoria, B.C.....            | 15 00 |
| 6274                | " 26                 | Charles H. Rush.....         | " .....               | Fredericton, N.B.....          | Yarmouth, N.S.....            | 15 00 |
| 6276                | " 26                 | Joseph Millette.....         | " .....               | Sorel, P.Q.....                | Montreal, P.Q.....            | 15 00 |
| 6277                | " 1                  | Simeon Coolen.....           | " .....               | Vancouver, B.C.....            | Vancouver, B.C.....           | 15 00 |
| 6278                | " 1                  | Abel Pearce.....             | " .....               | Strathcona, Alta.....          | Edmonton, Alta.....           | 15 00 |
| 6279                | " 1                  | George Morton Morrell.....   | " .....               | St. John, N.B.....             | Yarmouth, N.S.....            | 15 00 |
| 6280                | " 1                  | Perley W. McBride.....       | Mate.....             | Waterville, N.S.....           | " .....                       | 6 00  |
| 6281                | " 1                  | John Standly.....            | Master, (temp. cert.) | Banff, Alta.....               | Kenora, Ont.....              | 5 00  |
| 6282                | " 1                  | Ole Dahl.....                | " .....               | " .....                        | " .....                       | 5 00  |
| 6283                | " 7                  | George Jones.....            | Master.....           | Esquimalt, B.C.....            | Victoria, B.C.....            | 15 00 |
| 6284                | " 7                  | Robert Thomson.....          | Mate.....             | Victoria, B.C.....             | " .....                       | 6 00  |
| 6285                | " 7                  | William R. Isherwood.....    | " .....               | Fort Francis, Ont.....         | West Selkirk, Man.....        | 6 00  |
| 6286                | " 7                  | John Arnold Mowry.....       | Master.....           | St. John, N.B.....             | Yarmouth, N.S.....            | 15 00 |
| 6287                | " 7                  | Clair D. Baker.....          | " .....               | Margaretville, N.S.....        | " .....                       | 15 00 |
| 6288                | " 13                 | Henry C. Cartmell.....       | Mate.....             | Chilliwack, B.C.....           | Vancouver, B.C.....           | 6 00  |
| 6289                | June 13              | James Vincent Cavanagh.....  | Master.....           | Perth, Ont.....                | Ottawa, Ont.....              | 15 00 |
| 6290                | " 18                 | Charles A. Britton.....      | " (temp. cert.)       | Sturgeon Falls, Ont.....       | " .....                       | 5 00  |
| 6291                | " 20                 | John Annett.....             | Mate.....             | Nelson, B.C.....               | Nelson, B.C.....              | 6 00  |
| 6292                | " 20                 | William H. Murphy.....       | " .....               | Clarks Harbour, N.S.....       | Yarmouth, N.S.....            | 6 00  |
| 6293                | " 20                 | John S. Nicholson.....       | " .....               | Goderich, Ont.....             | Windsor, Ont.....             | 6 00  |
| 6294                | " 20                 | John Peter McLeod.....       | Master.....           | Hamilton, Ont.....             | " .....                       | 15 00 |
| 6295                | " 20                 | Eugene Carpentier.....       | Mate.....             | Champlain, P.Q.....            | Montreal, P.Q.....            | 6 00  |
| 6296                | " 20                 | Elieud Hoffman.....          | " .....               | Berthier, P.Q.....             | " .....                       | 6 00  |
| 6297                | " 23                 | David G. Morrissey.....      | Master.....           | Clarks Harbour, N.S.....       | Yarmouth, N.S.....            | 15 00 |
| 6298                | " 29                 | Henry Carr Cartmell.....     | " .....               | Chilliwack, B.C.....           | Vancouver, B.C.....           | 15 00 |
| 6299                | " 29                 | Xavier Brisebois.....        | " .....               | Ottawa, Ont.....               | Ottawa, Ont.....              | 15 00 |
| 6300                | July 8               | Joseph Connor.....           | Mate.....             | Victoria, B.C.....             | Victoria, B.C.....            | 6 00  |
| 6301                | " 8                  | Charles A. Murdock.....      | Master.....           | Sherbrooke, N.S.....           | Yarmouth, N.S.....            | 15 00 |
| 6302                | " 8                  | Frederick A. Harrison.....   | " .....               | Owen Sound, Ont.....           | Collingwood, Ont.....         | 15 00 |
| 6303                | " 8                  | Oliver George Kinnie.....    | " .....               | Vancouver, B.C.....            | Vancouver, B.C.....           | 15 00 |
| 6304                | " 8                  | Albert F. Stanton.....       | " (temp. cert.)       | Port Stanton, Ont.....         | Collingwood, Ont.....         | 5 00  |
| 6305                | " 13                 | Charles Lewis Fischer.....   | Master.....           | Victoria, B.C.....             | Victoria, B.C.....            | 15 00 |
| 6306                | " 13                 | Gilbert W. Brewster.....     | Mate.....             | Ladner, B.C.....               | Vancouver, B.C.....           | 6 00  |
| 6307                | " 18                 | Telephore Martin.....        | Master (temp. cert.)  | Pointe Fortune, P.Q.....       | Montreal, P.Q.....            | 5 00  |
| 6308                | " 18                 | James Andrew Lamb.....       | Master.....           | Arrowhead, B.C.....            | Nelson, B.C.....              | 15 00 |
| 6309                | " 26                 | James Arthur Nipon.....      | Mate.....             | Denman Island, B.C.....        | Victoria, B.C.....            | 6 00  |
| 6310                | " 26                 | Thomas John Robinson.....    | " .....               | Wabigoon, Ont.....             | West Selkirk, M.....          | 6 00  |
| 6311                | " 26                 | James Samuel Jones.....      | Master.....           | Port Maitland, Ont.....        | Toronto, Ont.....             | 15 00 |

## SESSIONAL PAPER No. 21

LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                          | Grade.                | Address.                   | Where examination was passed. | Fee.  |
|---------------------|----------------------|--------------------------------|-----------------------|----------------------------|-------------------------------|-------|
|                     | 1910                 |                                |                       |                            |                               | \$    |
| 6312                | Aug. 9               | James Dennett.....             | Mate.....             | New Westminster, B.C.      | Vancouver, B.C...             | 6 00  |
| 6313                | " 9                  | " .....                        | Master.....           | " .....                    | " .....                       | 15 00 |
| 6314                | " 9                  | Ezra Groleau.....              | Mate.....             | Vancouver, B.C.....        | " .....                       | 6 00  |
| 6315                | " 9                  | Samuel Herbert Coldicutt ..... | " .....               | Victoria, B.C.....         | Victoria, B.C.....            | 6 00  |
| 6316                | " 9                  | " .....                        | Master.....           | " .....                    | " .....                       | 15 00 |
| 6317                | " 9                  | James A. Morrison.....         | " .....               | " .....                    | " .....                       | 15 00 |
| 6318                | " 9                  | Edouard Cloutier.....          | " .....               | Anse à Giles, P.Q.....     | Montreal, P.Q.....            | 15 00 |
| 6319                | " 9                  | Charles D. MacLean.....        | Mate.....             | Chatham, N.B.....          | Yarmouth, N.S....             | 6 00  |
| 6320                | " 11                 | Oscar Wanamaker .....          | Master (temp. cert.)  | Lakefield, Ont.....        | Ottawa, Ont.....              | 5 00  |
| 6321                | " 11                 | Charles McLeod .....           | Master, (temp. cert.) | Cumberland, Ont. ....      | " .....                       | 5 00  |
| 6322                | " 19                 | Joseph Frenette .....          | Master.....           | Quebec, Que.....           | Montreal, P.Q.....            | 15 00 |
| 6323                | " 19                 | John Finlay.....               | " .....               | Vancouver, B.C.....        | Vancouver, B.C....            | 15 00 |
| 6324                | " 19                 | Ralph F. Forrest.....          | " .....               | Lockport, Man.....         | West Selkirk, Man             | 15 00 |
| 6325                | Sept. 16             | Stanley B. Wright .....        | Master, (temp. cert.) | Bobcaygeon, Ont.....       | Collingwood, Ont.             | 5 00  |
| 6326                | " 16                 | Thomas A. Brown.....           | Master.....           | Sarnia, Ont .....          | Windsor, Ont.....             | 15 0  |
| 6327                | " 16                 | Thomas Bushey .....            | " .....               | Byng Inlet, Ont .....      | Toronto, Ont.....             | 15 00 |
| 6328                | " 16                 | Herbert L. Duhamel.....        | " .....               | Vancouver, B.C.....        | Vancouver, B.C....            | 15 00 |
| 6329                | " 16                 | Zotique Mongeau.....           | " .....               | Sorel, P.Q.....            | Montreal, P.Q.....            | 15 00 |
| 6330                | " 16                 | Joseph Alphonse Lepine.....    | " .....               | St. Claire, P.Q.....       | " .....                       | 15 00 |
| 6331                | " 16                 | Joseph Coutu.....              | " .....               | St. Rock, Richelieu River. | " .....                       | 6 00  |
| 6332                | " 16                 | James Benham.....              | " .....               | Lockeport, N.S.....        | Yarmouth, N.S....             | 15 00 |
| 6333                | " 16                 | Wallace G. Rockwell.....       | " .....               | River Hebert, N.S....      | " .....                       | 6 00  |
| 6334                | " 16                 | Harry Albert Tufts.....        | " .....               | St. John, N.B.....         | " .....                       | 15 00 |
| 6335                | " 16                 | Herbert C. Crabbe.....         | " .....               | Brown's Flat .....         | " .....                       | 15 00 |
| 6336                | " 16                 | John Thompson.....             | Mate.....             | Arrowhead, B.C.....        | Nelson, B.C.....              | 6 00  |
| 6337                | " 16                 | William Gasper Jackson.....    | Master.....           | Upper North Sydney, N.S.   | North Sydney, N.S             | 15 00 |
| 6338                | " 16                 | John Burns Moore.....          | " .....               | Oliphant, Ont.....         | Windsor, Ont.....             | 15 00 |
| 6339                | " 16                 | Gilbert George Brown.....      | " .....               | Vancouver, B.C.....        | Vancouver, B.C....            | 15 00 |
| 6340                | " 16                 | " .....                        | Mate .....            | " .....                    | " .....                       | 6 00  |
| 6341                | " 16                 | Gordon Inness.....             | Master.....           | Liverpool, N.S.....        | Yarmouth, N.S....             | 15 00 |
| 6342                | " 16                 | John W. Dollar.....            | Mate.....             | Hampstead, N.B.....        | " .....                       | 6 00  |
| 6343                | " 16                 | William Blake .....            | " .....               | Toronto, Ont.....          | Montreal, P.Q.....            | 6 00  |
| 6344                | " 19                 | Joseph Mongeau.....            | Master.....           | Sorel, P.Q.....            | " .....                       | 15 00 |
| 6345                | " 29                 | Roderick MacKillop.....        | " .....               | Vancouver, B.C.....        | Vancouver, B.C....            | 15 00 |
| 6346                | " 29                 | Gwilym Arthur Williams .....   | Mate.....             | " .....                    | " .....                       | 6 00  |
| 6347                | Oct. 8               | Donald McGillivray.....        | " .....               | Kingston, Ont.....         | Montreal, P.Q.....            | 6 00  |
| 6348                | " 6                  | Ludoric Lacouture.....         | Master.....           | Montreal, P.Q.....         | " .....                       | 15 00 |
| 6349                | " 6                  | George Bruce McLeod .....      | Mate.....             | Proctor, B.C.....          | Nelson, B.C.....              | 6 00  |
| 6350                | " 6                  | Frank Goreham.....             | Master.....           | Woods Harbour, N.S.        | Yarmouth, N.S....             | 15 00 |
| 6351                | " 6                  | Sydney A. Harris.....          | " .....               | Vancouver, B.C.....        | Victoria, B.C.....            | 15 00 |
| 6352                | " 6                  | James Wilson Sutherland .....  | " .....               | North Sydney, N.S....      | North Sydney, N.S             | 15 00 |
| 6353                | " 6                  | Arthur George Cousins.....     | Master.....           | Belleville, Ont.....       | Windsor, Ont.....             | 15 00 |
| 6354                | " 13                 | Charles H. Marshall.....       | " .....               | Halifax, M.S.....          | Halifax, N.S.....             | 15 00 |
| 6355                | " 13                 | Douglas Copperthwaite.....     | " (temp. cert.)       | Campbellford, Ont.....     | " .....                       | 5 00  |
| 6356                | " 13                 | John Parker Pearson.....       | Master.....           | Owen Sound, Ont.....       | Windsor, Ont.....             | 15 00 |
| 6357                | " 13                 | James Pendergast.....          | " (temp. cert.)       | Cornwall, Ont.....         | " .....                       | 5 00  |
| 6358                | " 13                 | Gordon Evans.....              | Mate.....             | Victoria, B.C.....         | Victoria, B.C....             | 6 00  |
| 6359                | " 26                 | George Moraes.....             | Master.....           | " .....                    | " .....                       | 15 00 |
| 6360                | " 26                 | Ellice Martin Cavin.....       | " .....               | " .....                    | " .....                       | 15 00 |
| 6361                | " 26                 | Norman Gilbert Marvin.....     | Mate.....             | Dartmouth, N.S.....        | Halifax, N.S.....             | 6 00  |
| 6362                | " 26                 | Adolphe Lalonde.....           | " .....               | Cheneville, P.Q.....       | Montreal, P.Q.....            | 6 00  |
| 6363                | " 26                 | Robert Thomas Drever.....      | Master.....           | Vancouver, B.C.....        | Vancouver, B.C....            | 15 00 |
| 6364                | Nov. 4               | William S. Gale.....           | " .....               | Sombra, Ont.....           | Windsor, Ont.....             | 15 00 |
| 6365                | " 4                  | Samuel Nelson.....             | Mate.....             | Vancouver, B.C.....        | Vancouver, B.C....            | 6 00  |
| 6366                | " 8                  | Arthur Coutu.....              | " .....               | St. Rock, P.Q.....         | Montreal, P.Q.....            | 6 00  |
| 6367                | " 18                 | James S. Crouse.....           | Master.....           | Bridgewater, N.S....       | Lunenburg, N.S....            | 15 00 |
| 6368                | " 18                 | Charles Albert Gilbert .....   | " .....               | Victoria, B.C.....         | Victoria, B.C.....            | 15 00 |
| 6369                | " 18                 | " .....                        | Mate.....             | " .....                    | " .....                       | 6 00  |

LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Continued.*

| No. of certificate. | Date of certificate. | Name.                                 | Grade.                        | Address.  | Where examination was passed. | Fee.  |
|---------------------|----------------------|---------------------------------------|-------------------------------|---|-------------------------------|-------|
|                     | 1910.                |                                       |                               |   |                               | \$    |
| 6370                | Dec. 1               | Angus McLeod .....                    | " .....                       | Vancouver, B.C. ....                              | Vancouver, B.C. ....          | 6 00  |
| 6371                | " 1                  | Angus Carmichael Penney .....         | " .....                       | North Vancouver, B.C. ....                        | " .....                       | 6 00  |
| 6372                | " 1                  | William Frank Lipsett .....           | " .....                       | St. John, N.B. ....                               | Yarmouth, N.S. ....           | 6 00  |
| 6373                | " 1                  | Elie Bouille. ....                    | Master. ....                  | L'Ange Gardien, P.Q. ....                         | Montreal, P.Q. ....           | 15 00 |
| 6374                | " 7                  | Percy Massey Pearson .....            | Mate. ....                    | West Selkirk, Man. ....                           | West Selkirk, Man. ....       | 6 00  |
| 6375                | " 14                 | William Liddell. ....                 | Master. ....                  | Kingston, Ont. ....                               | Windsor, Ont. ....            | 15 00 |
| 6376                | " 14                 | George Nelson Hudgin. ....            | " .....                       | Pictou, Ont. ....                                 | " .....                       | 15 00 |
|                     | 1911.                |                                       |                               |   |                               |       |
| 6377                | Jan. 10              | William Sutherland. ....              | Mate. ....                    | Vancouver, B.C. ....                              | Victoria, B.C. ....           | 6 00  |
| 6378                | " 10                 | Alphonsus George Gleeson .....        | " .....                       | 76 Masterman Road-E,<br>Ham London, Eng-<br>land. | Yarmouth, N.S. ....           | 6 00  |
| 6379                | " 10                 | Jean Baptiste C. Hay-<br>mond. ....   | Master. ....                  | Beauharnois, P.Q. ....                            | Montreal, P.Q. ....           | 15 00 |
| 6380                | " 19                 | Sidney W. Collacott .....             | Mate. ....                    | Nelson, B.C. ....                                 | Nelson, B.C. ....             | 6 00  |
| 6381                | " 19                 | James Ewing Noel. ....                | Master. ....                  | Victoria, B.C. ....                               | Victoria, B.C. ....           | 15 00 |
| 6382                | " 19                 | Hector Larosie. ....                  | Mate. ....                    | Pierville Mills, P.Q. ....                        | Montreal, P.Q. ....           | 6 00  |
| 6383                | " 19                 | Archibald John Currie .....           | " .....                       | Collingwood, Ont. ....                            | Collingwood, Ont. ....        | 6 00  |
| 6384                | " 19                 | Hermenegilde St. Mar-<br>seille. .... | " .....                       | Cascades Point, P.Q. ....                         | Montreal, P.Q. ....           | 6 00  |
| 6385                | " 19                 | Harry James Martin. ....              | " .....                       | Kingston, Ont. ....                               | " .....                       | 6 00  |
| 6386                | " 19                 | Charles Alexander Martin .....        | " .....                       | " .....   | " .....                       | 6 00  |
| 6387                | " 19                 | Amede Seguin. ....                    | " .....                       | Hudson Heights, P.Q. ....                         | " .....                       | 6 00  |
| 6388                | " 19                 | Wilfrid Frottier. ....                | Master. ....                  | St. Anne de Bellevue,<br>P.Q. ....                | " .....                       | 15 00 |
| 6389                | " 19                 | Calvin Eldridge. ....                 | Mate. ....                    | C. G. S. "Curlew"<br>Halifax, N.S. ....           | Halifax, N.S. ....            | 6 00  |
| 6390                | " 26                 | Alexander Cameron. ....               | " .....                       | 80 Shore St. Gourock,<br>Scotland. ....           | Victoria, B.C. ....           | 6 00  |
| 6391                | " 26                 | Gagstad Erling. ....                  | Master. ....                  | Victoria, B.C. ....                               | " .....                       | 15 00 |
| 6392                | " 26                 | Samuel Jeremiah Delaney .....         | " .....                       | Morrisburg, Ont. ....                             | Collingwood, Ont. ....        | 15 00 |
| 6393                | " 26                 | Eldon Walkinshaw. ....                | Mate. ....                    | Collingwood, Ont. ....                            | " .....                       | 6 00  |
| 6394                | " 26                 | Alphonse Hoffmam. ....                | Master. ....                  | Berthier, P.Q. ....                               | Montreal, P.Q. ....           | 15 00 |
| 6395                | " 26                 | Charles Livingstone Ross .....        | Mate. ....                    | Portsmouth, Ont. ....                             | " .....                       | 6 00  |
| 6396                | " 26                 | Wendell James Brown. ....             | Master. ....                  | Corunna, Ont. ....                                | Windsor, Ont. ....            | 15 00 |
| 6397                | Feb. 10              | William James Balcom. ....            | Mate. ....                    | Halifax, N.S. ....                                | Halifax, N.S. ....            | 6 00  |
| 6398                | " 10                 | David Candow. ....                    | " .....                       | Vancouver, B.C. ....                              | Vancouver, B.C. ....          | 6 00  |
| 6399                | " 10                 | Roderick MacKenzie. ....              | " .....                       | Victoria, B.C. ....                               | Victoria, B.C. ....           | 6 00  |
| 6400                | " 10                 | Donat Lemay. ....                     | Master. ....                  | Lotbiniere, P.Q. ....                             | Montreal, P.Q. ....           | 15 00 |
| 6401                | " 10                 | Joseph Latour. ....                   | " .....                       | St. Ignace de Loyola,<br>P.Q. ....                | " .....                       | 15 00 |
| 6402                | " 10                 | Thomas Telson Edwards. ....           | " .....                       | Vancouver, B.C. ....                              | Vancouver, B.C. ....          | 15 00 |
| 6403                | " 10                 | Edward Seymour Gage. ....             | Mate. ....                    | Toronto, Ont. ....                                | Toronto, Ont. ....            | 6 00  |
| 6404                | " 10                 | Theodore S. Seaman .....              | Master (temp.<br>cert.) ..... | Sauble Falls, Ont. ....                           | Collingwood, Ont. ....        | 5 00  |
| 6405                | " 22                 | Stanley Murch. ....                   | Mate. ....                    | Collingwood, Ont. ....                            | " .....                       | 6 00  |
| 6406                | " 22                 | Earnest Russell Elyea. ....           | " .....                       | Mairs Mills, Ont. ....                            | " .....                       | 6 00  |
| 6407                | " 22                 | Daniel Martin. ....                   | Master. ....                  | Nanaimo, B.C. ....                                | Victoria, B.C. ....           | 15 00 |
| 6408                | " 22                 | Charles A. Neal. ....                 | Mate. ....                    | Courtright, Ont. ....                             | Windsor, Ont. ....            | 6 00  |
| 6409                | " 22                 | Thomas E. Hefferman. ....             | " .....                       | Pictou, Ont. ....                                 | " .....                       | 6 00  |
| 6410                | " 22                 | David Combe. ....                     | Master. ....                  | Vancouver, B.C. ....                              | Vancouver, B.C. ....          | 15 00 |
| 6411                | " 22                 | Samuel Dawe. ....                     | " .....                       | " .....   | " .....                       | 15 00 |
| 6412                | " 22                 | Frank H. Hawkes. ....                 | Mate. ....                    | Collingwood, Ont. ....                            | Collingwood, Ont. ....        | 6 00  |
| 6413                | " 22                 | Alfred Francis. ....                  | " .....                       | Toronto, Ont. ....                                | Toronto, Ont. ....            | 6 00  |
| 6414                | " 22                 | Edward Georgeson. ....                | " .....                       | Victoria, B.C. ....                               | Victoria, B.C. ....           | 6 00  |
| 6415                | " 22                 | William B. McCarthy. ....             | " .....                       | Vancouver, B.C. ....                              | Vancouver, B.C. ....          | 6 00  |
| 6416                | " 22                 | Thomas Tolson Edwards. ....           | " .....                       | " .....   | " .....                       | 6 00  |
| 6417                | Mar. 13              | Charles Britton. ....                 | Mate. ....                    | Meaford, Ont. ....                                | Toronto, Ont. ....            | 6 00  |
| 6418                | " 13                 | John Buchanan. ....                   | Master. ....                  | Toronto, Ont. ....                                | " .....                       | 15 00 |
| 6419                | " 13                 | William Davidson. ....                | " .....                       | Village of Dorset, Ont. ....                      | Collingwood, Ont. ....        | 15 00 |
| 6420                | " 13                 | Malcolm Stalker. ....                 | " .....                       | Penetanguishine, Ont. ....                        | " .....                       | 15 00 |
| 6421                | " 13                 | John A. McLellan. ....                | Mate. ....                    | East Linton, Ont. ....                            | Windsor, Ont. ....            | 6 00  |
| 6422                | " 13                 | Albert J. Hogue. ....                 | " .....                       | Brookholm, Ont. ....                              | " .....                       | 6 00  |



## SESSIONAL PAPER No. 21

LIST of Certificates of competency issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911—*Concluded*.

| No. of certificate. | Date of certificate. | Name.                     | Grade.                 | Address.                    | Where examination was passed. | Fee.  |
|---------------------|----------------------|---------------------------|------------------------|-----------------------------|-------------------------------|-------|
|                     | 1910.                |                           |                        |                             |                               | \$    |
| 6423                | Mar. 13              | James Pope .....          | Master.....            | Louisburg, N.S. ....        | Halifax, N.S. ....            | 15 00 |
| 6424                | " 13                 | William Allan Darling..   | Mate.....              | Collingwood, Ont. ....      | Collingwood, Ont. ....        | 6 00  |
| 6425                | " 13                 | Joseph Leduc.....         | Master..               | St. Henri, P.Q. ....        | Montreal, P.Q. ....           | 15 00 |
| 6426                | " 13                 | Joseph Lazare D. Morin.   | " .....                | St. Marcel, P.Q. ....       | " .....                       | 15 00 |
| 6427                | " 13                 | Oscar Mercier .....       | Mate.....              | Berthier en Bas, P.Q..      | " .....                       | 6 00  |
| 6428                | " 13                 | Philippe Gagnon.....      | " .....                | Rivière Ouelle, P.Q. ....   | " .....                       | 6 00  |
| 6429                | " 13                 | Octave Houde .....        | " .....                | St. Antoine de Tilly, P.Q.  | " .....                       | 6 00  |
| 6430                | " 13                 | Frank A. Firth.....       | Master.....            | Lockeport, N.S. ....        | Yarmouth, N.S. ....           | 15 00 |
| 6431                | " 13                 | James P. Loughery.....    | " .....                | St. John, N.B. ....         | " .....                       | 15 00 |
| 6432                | " 13                 | Richard Avery Minniss ..  | " .....                | Morden, N.S. ....           | " .....                       | 15 00 |
| 6433                | " 13                 | Lewis F. Barkhouse.....   | Mate.....              | Westport, N.S. ....         | " .....                       | 6 00  |
| 6434                | " 13                 | William Dalton.....       | " .....                | Sault Ste. Marie, Ont. .... | Windsor, Ont. ....            | 6 00  |
| 6435                | " 13                 | Philias Blouin .....      | " .....                | Quebec, Que. ....           | Montreal, P.Q. ....           | 6 00  |
| 6436                | " 13                 | James Jackson.....        | Master, (temp. cert.). | Indian White Horse, Y.T.    | " .....                       | 5 00  |
| 6437                | " 13                 | Joseph John May.....      | Master.....            | Little Current, Ont. ....   | Collingwood, Ont. ....        | 6 00  |
| 6438                | " 13                 | Hartford D. Laughlin....  | Mate.....              | Midland, Ont. ....          | " .....                       | 6 00  |
| 6439                | " 29                 | Angus Gordon MacKay....   | Master.....            | Owen Sound, Ont. ....       | Toronto, Ont. ....            | 15 00 |
| 6440                | " 29                 | James D. Montgomery....   | " .....                | Collingwood, Ont. ....      | Collingwood, Ont. ....        | 15 00 |
| 6441                | " 29                 | Adam Casson .....         | " .....                | Gore Bay, Ont. ....         | Toronto, Ont. ....            | 15 00 |
| 6442                | " 29                 | Herbert Williard LaRush   | " .....                | Toronto, Ont. ....          | " .....                       | 15 00 |
| 6443                | " 29                 | Alexander Ryan.....       | " .....                | Millville, C.B., N.S. ....  | North Sydney, N.S. ....       | 15 00 |
| 6444                | " 29                 | Robert Wilson.....        | " .....                | Vancouver, B.C. ....        | Vancouver, B.C. ....          | 15 00 |
| 6445                | " 29                 | James Batt.....           | Mate.....              | " .....                     | " .....                       | 6 00  |
| 6446                | " 29                 | William Herbert Ransom .. | " .....                | King, Ont. ....             | Collingwood, Ont. ....        | 6 00  |
| 6447                | " 29                 | Robert Stuart Kerr.....   | " .....                | Victoria, B.C. ....         | Victoria, B.C. ....           | 6 00  |
| 6448                | " 29                 | Frank Gosse .....         | " .....                | " .....                     | " .....                       | 6 00  |
| 6449                | " 29                 | Nelson McGlennon.....     | Master.....            | Toronto, Ont. ....          | Toronto, Ont. ....            | 15 00 |
| 6450                | " 29                 | Douglas Copperthwaite..   | " .....                | Peterborough, Ont. ....     | " .....                       | 15 00 |
| 6451                | " 29                 | Henry Douglas.....        | " .....                | Birdsall, Ont. ....         | " .....                       | 15 00 |
| 6452                | " 29                 | Arthur Jefferys.....      | " .....                | Brantford, Ont. ....        | " .....                       | 15 00 |
| 6453                | " 29                 | Frank William Kingston .. | " .....                | Port Colborne, Ont. ....    | " .....                       | 15 00 |
| 6454                | " 29                 | Victor Houde.....         | Mate.....              | St. Antoine de Tilly, P.Q.  | Montreal, P.Q. ....           | 6 00  |
| 6455                | " 29                 | William Vincent Smith.... | Master.....            | Seeley's Bay, Ont. ....     | " .....                       | 15 00 |
| 6456                | " 29                 | Calice P. Bourgeois.....  | Mate.....              | Cheticamp, N.S. ....        | Yarmouth, N.S. ....           | 6 00  |
| 6457                | " 29                 | Andrew B. Guilfoil.....   | Master.....            | St. John, N.B. ....         | " .....                       | 15 00 |
| 6458                | " 29                 | James Curwen.....         | " .....                | Richibucto, N.B. ....       | " .....                       | 15 00 |
| 6459                | " 29                 | Christopher McLean.....   | " .....                | Chatham, N.B. ....          | Halifax, N.S. ....            | 15 00 |
| 6460                | " 29                 | Arthur L. Woods.....      | Mate.....              | Halifax, N.S. ....          | " .....                       | 6 00  |
| 6461                | " 29                 | William Sitland .....     | Master.....            | " .....                     | " .....                       | 15 00 |
| 6462                | " 29                 | James Lawrence.....       | " .....                | Vancouver, B.C. ....        | Vancouver, B.C. ....          | 15 00 |
| 6463                | " 29                 | Ernest Samuel Bailey....  | Mate.....              | Collingwood, Ont. ....      | Collingwood, Ont. ....        | 6 00  |
| 6464                | " 29                 | Arthur James Kelly.....   | Master.....            | Kippewa, Ont. ....          | " .....                       | 15 00 |
| 6465                | " 29                 | Joseph Harris Daball....  | Master, (temp. cert.). | Collingwood, Ont. ....      | " .....                       | 5 00  |
| 6466                | " 29                 | McLean Campbell.....      | Master.....            | " .....                     | Collingwood, Ont. ....        | 15 00 |
| 6467                | " 29                 | Arthur Arch. Hudson.....  | " .....                | " .....                     | " .....                       | 15 00 |

LIST of Certificates of service issued to Masters and Mates of inland and coasting vessels during the twelve months ended March 31, 1911.

| No. of certificate. | Date of certificate. | Name.            | Grade.      | Address.              | Where examination was passed. | Fee. |
|---------------------|----------------------|------------------|-------------|-----------------------|-------------------------------|------|
|                     | 1910.                |                  |             |                       |                               | \$   |
| 3411                | Aug. 8               | Enoch Mason..... | Master..... | Mahone Bay, N.S. .... | Halifax, N.S. ....            | 8 00 |



2 GEORGE V., A. 1912

LIST of Certificates of competency sea-going to Masters, Mates and Second Mates issued for the twelve months ending March 31, 1911.

| No. of certificate. | Date of certificate. | Name.                      | Grade.         | Address.   | Where examination was passed. | Fee.  |
|---------------------|----------------------|----------------------------|----------------|--|-------------------------------|-------|
|                     | 1910.                |                            |                |  |                               | \$    |
| 3833                | April 1              | Robert J. Dustan.....      | 2nd Mate.....  | Pictou, N.S.....   | Halifax, N.S.....             | 8 00  |
| 3834                | "                    | 1 Harry Stewart Morris.... | Master.....    | Middleton, N.S. ....                                       | " .....                       | 15 00 |
| 3835                | "                    | 1 Hiram C. Mitchell.....   | Mate.....      | Halifax, N.S.....  | " .....                       | 8 00  |
| 3836                | " 26                 | Albert G. Hermanson.....   | Master.....    | St. John, N.B.....   | Yarmouth, N.S....             | 15 00 |
| 3837                | " 26                 | David I. Wade.....         | 2nd Mate.....  | Annapolis, N.S.....  | " .....                       | 8 00  |
| 3838                | June 3               | John Cecil Conroy.....     | " .....        | Seaman's Institute....                                     | Vancouver, B.C....            | 8 00  |
| 3839                | " 3                  | Robert J. Blair.....       | Mate.....      | Karsdale, N.S. ....  | Yarmouth, N.S....             | 8 00  |
| 3840                | " 3                  | John McIntyre.....         | 2nd Mate.....  | Vancouver, B.C.....  | Vancouver, B.C....            | 8 00  |
| 3841                | " 3                  | James Laurence.....        | " .....        | " .....  | " .....                       | 8 00  |
| 3842                | " 17                 | Sidney Alex. Smith.....    | Mate.....      | 55 Thompson Street,<br>Aberdeen.                           | " .....                       | 8 00  |
| 3843                | " 17                 | Edward J. Hagan .....      | " .....        | Liverpool, N.S.....  | Yarmouth, N.S....             | 8 00  |
| 3844                | July 16              | G. E. Lloyd Kay .....      | 2nd Mate.....  | St. John, N.B.....   | Halifax, N.S....              | 8 00  |
| 3845                | Aug. 4               | William Freder'k Evelyn    | Master.....    | Yarmouth, N.S.....   | Yarmouth, N.S....             | 15 00 |
| 3846                | " 13                 | Joseph Russell Stenhouse   | 2nd Mate.....  | 23 Victoria Avenue,<br>Barrow-in-Furness,<br>England.      | Vancouver, B.C....            | 8 00  |
| 3847                | Sept. 7              | William J. McCandless..    | " .....        | Seamen's Mission....                                       | " .....                       | 8 00  |
| 3848                | " 7                  | Eugene Loftus.....         | Master.....    | 3 Frasers Street,<br>W. Nensington,<br>London West.        | Victoria, B.C.....            | 15 00 |
| 3849                | " 7                  | Peter F. Mal'ett.....      | " .....        | Yarmouth, N.S.....   | Yarmouth, N.S....             | 15 00 |
| 3850                | " 7                  | Roderick McDonald.....     | Mate.....      | New York, U.S.A .....                                      | " .....                       | 8 00  |
| 3851                | " 7                  | John Clair Gold.....       | Master.....    | Vancouver, B.C.....  | Vancouver, B.C....            | 15 00 |
| 3852                | " 7                  | Hubert Shadforth.....      | " .....        | " .....  | " .....                       | 15 00 |
| 3853                | Oct. 6               | Walter Douglas Roach..     | 2nd Mate.....  | " .....  | " .....                       | 8 00  |
| 3854                | " 6                  | Newton A. Wilkie .....     | Master.....    | Middle La Have, N.S.                                       | Yarmouth, N.S....             | 15 00 |
| 3855                | " 22                 | Arthur Thos. Willoughby    | Mate.....      | Vancouver, B.C.....  | Vancouver, B.C....            | 8 00  |
| 3856                | Nov. 6               | Alan Comber Lambert..      | 2nd Mate.....  | 126 Landcroft Road,<br>E. Dulwich, London,<br>England.     | Victoria, B.C.....            | 8 00  |
| 3857                | Dec. 7               | Herbert Andrew Johnson     | " .....        | 111 Coltman Street,<br>Hull, England.                      | " .....                       | 8 00  |
| 3858                | " 7                  | James Allen Rice.....      | " .....        | Yarmouth, N.S.....   | Yarmouth, N.S....             | 8 00  |
| 3859                | " 7                  | George A. McBride.....     | Mate.....      | Harbourville, N.S....                                      | " .....                       | 8 00  |
| 3860                | " 7                  | Alexander H. Strumm....    | Master.....    | Malone Bay, N.S.....                                       | " .....                       | 15 00 |
| 3861                | " 7                  | Peter Laureat Lachance.    | " .....        | Quebec, P.Q.....   | " .....                       | 15 00 |
| 3862                | " 13                 | George Parker Burris....   | Mate.....      | Mid' Musquodoboit,<br>N.S.                                 | Halifax, N.S.....             | 8 00  |
| 3863                | Jan. 10              | Ralph E. Sabean.....       | 2nd Mate ..... | Yarmouth, N.S.....   | Yarmouth, N.S....             | 8 00  |
| 3864                | " 10                 | Daniel McCallum.....       | " .....        | Victoria, B.C.....   | Victoria, B.C.....            | 8 00  |
| 3865                | " 10                 | Arthur Ambrose Atkins.     | Master.....    | 137 Isledon Rd. Fins-<br>bury Park,<br>London N., England. | Vancouver, B.C....            | 15 00 |
| 3866                | Feb. 2               | David Mason Taggart...     | 2nd Mate.....  | Lower Onslow, N.S....                                      | Halifax, N.S.....             | 8 00  |
| 3867                | " 14                 | William Ramsay.....        | Mate.....      | No. 1 Mollison Street,<br>Dundee.                          | Yarmouth, N.S....             | 8 00  |
| 3868                | " 14                 | Charles A. Z. Forsell....  | " .....        | Yarmouth, N.S.....   | " .....                       | 8 00  |
| 3869                | " 14                 | Richard Lechner.....       | " .....        | Philadelphia, U.S.A ..                                     | Ottawa, Ont .....             | 8 00  |
| 3870                | Mar. 15              | Walter B. Bethell.....     | Master.....    | Halifax, N.S.....  | Halifax, N.S....              | 15 00 |
| 3871                | " 15                 | H. Marshall O'Hara.....    | " .....        | Isaacs Harbour, N.S..                                      | " .....                       | 15 00 |
| 3872                | Apr. 23              | Fletcher C. Zwickert....   | Master.....    | Mahone Bay, N.S.....                                       | Yarmouth, N.S....             | 15 00 |
| 3873                | May 10               | Paul S. Corkum.....        | 2nd mate.....  | Middle La Have, N.S.                                       | " .....                       | 8 00  |
| 3874                | " 25                 | Winslow A. McKay.....      | " .....        | Shelburne, N.S.....  | " .....                       | 8 00  |
| 3875                | June 2               | Collin McKay.....          | " .....        | " .....  | Halifax, N.S.....             | 8 00  |
| 3876                | " 7                  | Gustav Follmer.....        | Master.....    | Victoria, B.C.....   | Victoria, B.C.....            | 15 00 |
| 3877                | " 20                 | Wilbert A. Card.....       | Mate.....      | Summersville, N.S....                                      | Yarmouth, N.S....             | 8 00  |
| 3878                | " 20                 | Reginald Rose .....        | " .....        | Cheverie, N.S.....   | " .....                       | 8 00  |
| 3879                | " 20                 | Arthur Ellis.....          | 2nd mate.....  | Economy, N.S.....  | " .....                       | 8 00  |
| 3880                | July 13              | Wilfred Lockhart.....      | Master.....    | Hantsport, N.S.....  | " .....                       | 15 00 |
| 3881                | " 13                 | Fred S. Inness.....        | " .....        | Liverpool, N.S.....  | " .....                       | 15 00 |
| 3882                | " 13                 | Alexander Walter.....      | Mate.....      | Vancouver, B.C.....  | Vancouver, B.C....            | 8 00  |
| 3883                | " 26                 | David Innes Wade .....     | " .....        | Annapolis, N.S.....  | Yarmouth, N.S....             | 8 00  |
| 3884                | " 26                 | Alexander P. Strumm ..     | Master .....   | Lunenburg, N.S.....  | " .....                       | 15 00 |

## SESSIONAL PAPER No. 21

LIST of Certificates of competency sea-going to Masters, Mates and Second Mates issued for the twelve months ending March 31, 1911.

| No. of certificate. | Date of certificate. | Name.                     | Grade.         | Address.                                   | Where examination was passed. | Fee.  |
|---------------------|----------------------|---------------------------|----------------|--|-------------------------------|-------|
|                     | 1910                 |                           |                |  |                               | \$    |
| 3885                | " 26                 | Maurice W. Geldert ...    | 2nd mate ..... | Morell Station, P.E.I.                     | Yarmouth, N.S. ...            | 8 00  |
| 3886                | Aug. 8               | James Alexander Walker    | " .....        | Garnethill Glasgow, Scotland               | Victoria, B.C. ....           | 8 00  |
| 3887                | " 8                  | Henry O. Forward .....    | Master .....   | Burgeo, Newfld .....                       | Yarmouth, N.S. ...            | 15 00 |
| 3888                | " 8                  | Wilbert A. Inness .....   | " .....        | Liverpool, N.S. ....                       | " .....                       | 15 00 |
| 3889                | Sept. 14             | Jabez James Hancock...    | Mate .....     | British Consul, New York.                  | " .....                       | 8 00  |
| 3890                | " 14                 | Peter Sinclair .....      | Master .....   | Vancouver, B. C. ....                      | Vancouver, B.C. ...           | 15 00 |
| 3891                | " 14                 | Ambrose Landry .....      | Mate .....     | Carleton, Que. ....                        | Yarmouth, N.S. ...            | 8 00  |
| 3892                | " 14                 | Stanley J. Kaulback ..... | 2nd mate ..... | Maahone Bay, N.S. ....                     | " .....                       | 8 00  |
| 3893                | " 14                 | Thomas Eli Walker .....   | Mate .....     | Seattle, U.S.A. ....                       | Vancouver, B.C. ...           | 8 00  |
| 3894                | " 14                 | Arthur S. Warner .....    | " .....        | New York, U.S.A. ....                      | Yarmouth, N.S. ...            | 8 00  |
| 3895                | " 14                 | Charles William Whidden   | Master .....   | Weymouth, N.S. ....                        | " .....                       | 15 00 |
| 3896                | " 29                 | James Alfred Chalmers     | 2nd mate ..... | Garron Broughty Ferry W., Scotland. ....   | Vancouver, B.C. ...           | 8 00  |
| 3897                | " 29                 | Frederick James Brewis.   | Master .....   | 59 Whitehall Road, Gateshead on Tyne.      | Victoria, B.C. ...            | 15 00 |
| 3898                | Oct. 7               | William Kinane .....      | Mate .....     | Victoria, B. C. ....                       | " .....                       | 8 00  |
| 3899                | " 7                  | Walter B. McCarthy .....  | Master .....   | Halifax, N.S. ....                         | Yarmouth, N.S. ...            | 15 00 |
| 3900                | " 11                 | Alexander D. Livingston   | " .....        | Big Bras d'Or, Cape Breton, N.S.           | Halifax, N.S. ....            | 15 00 |
| 3901                | " 11                 | Andrew Brown .....        | 2nd mate ..... | Cheverie, N.S. ....                        | Yarmouth, N.S. ...            | 8 00  |
| 3902                | " 26                 | Christian A. P. Jensen .. | " .....        | 14th Columbia Place, Brooklyn, N.Y.        | " .....                       | 8 00  |
| 3903                | " 26                 | Arthur R. C. Newburgh.    | " .....        | Vancouver, B. C. ....                      | Vancouver, B.C. ...           | 8 00  |
| 3904                | Nov. 8               | Charles B. Smith .....    | Mate .....     | " .....                                    | " .....                       | 8 00  |
| 3905                | " 18                 | Sidney Alexander Smith.   | Master .....   | 55 Thomson Street, Aberdeen, Scotland.     | " .....                       | 15 00 |
| 3606                | " 18                 | Hiram Cranswick Mitchell. | " .....        | 139 Upper Water Str., Halifax, N.S.        | Yarmouth, N.S. ...            | 15 00 |
| 3907                | Dec. 9               | Edmund L. R. Humphreys.   | " .....        | 16 Rockfield Rd., Anfield, Liverpool, Eng. | Victoria, B.C. ....           | 15 00 |
|                     | 1911.                |                           |                |  |                               |       |
| 3908                | Jan. 7               | Maurice Mayall .....      | " .....        | R.M.S. Empress of India.                   | Vancouver, B.C. ...           | 15 00 |
| 3909                | " 7                  | William Fraser .....      | " .....        | New York City, U.S.A.                      | Yarmouth, N.S. ...            | 15 00 |
| 3910                | " 26                 | William Sheppard .....    | 2nd mate ..... | H.M.C. College, Halifax, N.S.              | Halifax, N.S. ....            | 8 00  |
| 3911                | Feb. 13              | Oswald Rennison Parker    | Master .....   | Victoria, B.C. ....                        | Victoria, B.C. ....           | 15 00 |
| 3912                | " 22                 | Leonard Arthur Waters.    | " .....        | San Francisco, U.S.A.                      | Vancouver, B.C. ...           | 15 00 |
| 3913                | Mar. 10              | James S. Lecain .....     | 2nd mate ..... | Cheverie, Annapolis, N.S.                  | Yarmouth, N.S. ...            | 8 00  |
| 3914                | " 16                 | Alfred Graham .....       | Mate .....     | New Glasgow, N.S. ....                     | " .....                       | 8 00  |
| 3915                | " 16                 | Robert N. Anderson .....  | 2nd mate ..... | Port Elgin, N.B. ....                      | " .....                       | 8 00  |
| 3916                | " 16                 | G. A. Lloyd Kay .....     | Mate .....     | St John, N.B. ....                         | " .....                       | 8 00  |

## APPENDIX No. 20.

STATEMENT giving names of stations and lightkeepers &c., in the Dominion of Canada.

## PRINCE EDWARD ISLAND.

| Name of station.                         | Name of lightkeeper.    | Appointed.       | Salary. |
|--|-------------------------|------------------|---------|
|  |                         |                  | \$ cts. |
| Alberton.....                            | Jas. A. Leavitt.....    | Nov. 2, 1910..   | 120 00  |
| Annandale.....                           | Alfred Robertson.....   | Oct. 6, 1898..   | 180 00  |
| Block House, Point.....                  | A. S. McNeil.....       | Mar. 25, 1901..  | 545 00  |
| Brighton Range.....                      | Francis W. Hughes.....  | April 1, 1909..  | 335 00  |
| Brush Wharf.....                         | D. W. McPherson.....    | Jan. 13, 1899..  | 120 00  |
| Cascumpec Island.....                    | James Tuplin.....       | May 5, 1897..    | 440 00  |
| Crapaud Outer.....                       | Abner J. Howatt.....    | July 22, 1893..  | 180 00  |
| " Inner.....                             | James Inman.....        | Aug. 13, 1901..  | 180 00  |
| Cardigan River.....                      | John W. Morrison.....   | " 15, 1901..     | 140 00  |
| Cape Bear.....                           | Luther Jordan.....      | April 12, 1905.. | 520 00  |
| Cape Egmont.....                         | Jos. J. D. Gallant..... | Oct. 21, 1902..  | 380 00  |
| Cape Tryon.....                          | William Bell.....       | Mar. 17, 1905..  | 380 00  |
| Cove Head Range.....                     | John A. Kielly.....     | Nov. 27, 1890..  | 140 00  |
| Darnley Range.....                       | Geo. W. Wiggins.....    | Oct. 16, 1896..  | 220 00  |
| Darnley, basin.....                      | Chas. Taylor.....       | June 14, 1897..  | 120 00  |
| East Point.....                          | R. J. McDonald.....     | Jan. 18, 1901..  | 980 00  |
| Fish Island.....                         | J. A. L. McLellan.....  | ".....           | 320 00  |
| Georgetown Inner.....                    | Jesse G. Clark.....     | Aug. 14, 1901..  | 220 00  |
| Georgetown Railway Wharf.....            | John Westaway.....      | Jan. 16, 1906..  | 180 00  |
| Grand Tracadie.....                      | J. W. McDonald.....     | May 24, 1901..   | 180 00  |
| Hazard, Inner Range }<br>" Outer Range } | Edwin Stewart.....      | May.....         | 260 00  |
| Indian Point.....                        | J. S. Allen.....        | May 18, 1898..   | 545 00  |
| Little Channel.....                      | William Hardy.....      | " 26, 1875..     | 180 00  |
| Murray Harbour, Inner.....               | Robert Penny.....       | Nov. 11, 1897..  | 120 00  |
| " Outer.....                             | Lemuel McLeod.....      | Dec. 21, 1897..  | 120 00  |
| Miminegash, Inner.....                   | Elijah Costain.....     | May 18, 1906..   | 120 00  |
| " Outer.....                             | Patrick O'Brien.....    | " 14, 1897..     | 120 00  |
| New London.....                          | James H. McLeod.....    | Jan. 29, 1896..  | 220 00  |
| North Cape.....                          | James Phee.....         | Sept. 4, 1897..  | 440 00  |
| Northport Range.....                     | Wm. Champion.....       | Oct. 25, 1897..  | 180 00  |
| North Rustico.....                       | Jos. N. Pino.....       | Feb. 6, 1897..   | 220 00  |
| Orwell.....                              | John McDonald.....      | June 25, 1879..  | 120 00  |
| Point Prim.....                          | Alex. McRae.....        | Dec. 10, 1897..  | 395 00  |
| Panmure.....                             | W. E. Graham.....       | ".....           | 440 00  |
| " F. A.....                              | Mathias Condon.....     | Aug. 4, 1908..   | 490 00  |
| Savage Harbour.....                      | Jas. A. McDonald.....   | July 11, 1889..  | 180 00  |
| Sea Cow Head.....                        | M. P. O'Roneghan.....   | April 21, 1873.. | 440 00  |
| Souris, East.....                        | John D. Lavie.....      | June 23, 1905..  | 520 00  |
| Summerside Wharf.....                    | John Fraser.....        | April 12, 1897.. | 180 00  |
| Summerside Range.....                    | George W. Bell.....     | " 10, 1909..     | 125 00  |
| St. Andrew, Point.....                   | George Connor.....      | June 3, 1901..   | 220 00  |
| St. Peters Island.....                   | James W. Taylor.....    | May 1, 1897..    | 320 00  |
| St. Peter Harbour.....                   | Albert Anderson.....    | July 25, 1900..  | 220 00  |
| Tignish Run.....                         | Agapé Gaudet.....       | Aug. 30, 1897..  | 220 00  |
| Warren Farm Range.....                   | A. S. McNeil.....       | May 16, 1907..   | 140 00  |
| West Point.....                          | William McDonald.....   | Jan. 22, 1876..  | 440 00  |
| Wood Island.....                         | Roderick W. McKay.....  | April 11, 1899.. | 380 00  |
| Wood Island Range.....                   | James Young.....        | Nov. 14, 1902..  | 140 00  |
| Wrights Range.....                       | Charles Wright.....     | June 14, 1894..  | 180 00  |



SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—Continued.

NOVA SCOTIA.

| Name of station.                    | Name of lightkeeper.       | Appointed.         | Salary.  |
|-------------------------------------|----------------------------|--------------------|----------|
|                                     |                            |                    | \$ cts.  |
| Abbott Harbour.....                 | W. H. D'Entremont.....     | May 22 1888....    | 140 00   |
| Advocate Harbour.....               | John H. Morris.....        | Aug. 10 1904....   | 380 00   |
| Amet Island.....                    | Lloyd Rogers.....          | Nov. 11 1902....   | 600 00   |
| Amherst Harbour Range F. & B        | William Shea.....          | May 21 1908....    | 260 00   |
| Amherst Pt., Wharf.....             | W. A. Downie.....          | " 3 1909.....      | 105 00   |
| Annapolis.....                      | Jos. McMullen.....         | " 1 1908.....      | 140 00   |
| Apple River Light and Fog Alarm     | Hiel E. Elderkin.....      | " 31 1905.....     | 980 00   |
| Argyle.....                         | Chas. A. Amiro.....        | Feb. 6 1893.....   | 600 00   |
| Arichat.....                        | Cap. Wm. Lavashe.....      | Oct. 17 1898.....  | 405 00   |
| Arichat W. Fr. Range.....           | Michall Gerrior.....       | Sept. 1 1904....   | 140 00   |
| " W. B. Range.....                  | Edouard Delorey.....       | " 1 1904.....      | 140 00   |
| Arisaig.....                        | Hugh R. McAdam.....        | Nov. 14 1898.....  | 180 00   |
| Avon River Bridge.....              | Windsor E. Lt. Co.....     | Oct. 13 1892.....  | 200 00   |
| Baccaro.....                        | Wm. L. Smith.....          | Jan. 9 1907.....   | 625 00   |
| Barrington Lightship.....           | Capt. Jno. H. Lyons.....   | June 18 1897.....  | 980 00   |
| Battery Point.....                  | Henry Naas.....            | Mar. 12 1897.....  | 465 00   |
| Bear River.....                     | Wm. Hunt.....              | Apr. 10 1905.....  | 260 00   |
| Beaver Harbour.....                 | L. G. Cameron.....         | Feb. 15 1902.....  | 220 00   |
| Beaver Island S. E.....             | Theo. Sampson.....         | Oct. 13 1892.....  | 140 00   |
| Bear Island.....                    | Michael O'Brien.....       | Dec. 7 1906.....   | * 405 00 |
| Beaver Island Lt & F. A.....        | W. E. O'Leary.....         | Feb. 22 1900.....  | 1030 00  |
| Belliveau Cove.....                 | J. H. Belliveau.....       | " 16 1889.....     | 140 00   |
| Betty Island.....                   | P. E. Christian.....       | June 29 1904.....  | 680 00   |
| Biglow Pt. Fr. & B.....             | Earnest Mitchell.....      | Mar. 31 1909.....  | 150 00   |
| Bird Island.....                    | H. G. McKay.....           | May 21 1901.....   | 600 00   |
| Black Rock.....                     | Chas. Robinson.....        | Mar. 16 1885.....  | 440 00   |
| Black Rock Point.....               | M. D. Morrison.....        | June 8 1892.....   | 380 00   |
| Boars Head.....                     | F. Ruggles.....            | May 24 1901.....   | 520 00   |
| Bass River.....                     | David Vance.....           | Oct. 24 1907.....  | 140 00   |
| Borden Wharf.....                   | Fredk. Clarke.....         | May 1 1904.....    | 160 00   |
| Bon Portage.....                    | Angus Greenwood.....       | Jan. 14 1907.....  | 545 00   |
| Briar Island Light.....             | J. N. Peters.....          | June 6 1901.....   | 565 42   |
| Briar Island Fog Alarm.....         | B. H. Morrell.....         | " 6 1901.....      | 614 58   |
| Brooklin Pier.....                  | Howard Godfrey.....        | Feb. 6 1885.....   | 125 00   |
| Bunker's Island.....                | F. H. Doane.....           | July 27 1904.....  | 545 00   |
| " Nord End.....                     | Jas. H. Schoville.....     | Jan. 16 1907.....  | 320 00   |
| Budget.....                         | Freeman Pride.....         | Dec. 7 1905.....   | 320 00   |
| Burnt Coat.....                     | Wm. Y. Falkner.....        | June 22 1893.....  | 380 00   |
| Bourgeois Inlet.....                | Marian Burke.....          | Dec. 1 1902.....   | 120 00   |
| Campbell Island.....                | John A. McDonald.....      | Feb. 16 1907.....  | 220 00   |
| Candlebox Island.....               | Benjamin Leblanc.....      | Nov. 1 1892.....   | 465 00   |
| Canso Harbour and False Passage.    | Joseph Long.....           | Dec. 31 1896.....  | 465 00   |
| Canso Harbour Range.....            | Wm. J. Mathews.....        | " 17 1904.....     | 320 00   |
| Cape D'Or Fog Alarm.....            | F. H. P. Dewis.....        | April 13 1898..... | 980 00   |
| Cape Fourchu Light and Fog Alarm.   | T. S. Doane.....           | Dec. 31 1904.....  | 1,180 00 |
| Cape Freels Newfoundland Fog Alarm. | Michall Myrick.....        | Sept. 26 1910..... | 980 00   |
| Cape George.....                    | Alex. McEachern.....       | Nov. 3 1882.....   | 680 00   |
| Cape La Ronde.....                  | John J. Mauger.....        | " 16 1898.....     | 520 00   |
| Cape North, Lt & F. A.....          | Norman McLeod.....         | Oct. 14 1899.....  | 500 00   |
| Cape Roseway, Light and Fog Alarm.  | John L. McKenna.....       | Mar. 31 1899.....  | 1,180 00 |
| Cape Sable.....                     | Arthur Cunningham.....     | July 16 1902.....  | 1,180 00 |
| Cape Race N. F. L.....              | John Myrick.....           | Nov. 1 1897.....   | 2,300 00 |
| Cape Saint George.....              | John Murray.....           | Sept. 8 1898.....  | 345 00   |
| Cape St. Lawrence.....              | Chas. Jamieson.....        | " 21 1893.....     | 600 00   |
| Cape St. Mary.....                  | Benj. H. Robichaud.....    | July 5 1886.....   | 520 00   |
| Cape Sharpe.....                    | Freeman Yorke.....         | June 30 1902.....  | 980 00   |
| Caribou Island.....                 | D. Falconer.....           | Dec. 20 1902.....  | 520 00   |
| Carter Island.....                  | Robert McDonald.....       | Jan. 4 1886.....   | 405 00   |
| Caveau Point Range.....             | Germain Chiasson.....      | Aug. 20 1897.....  | 260 00   |
| Charlo Cove Light, F. & B.....      | Stephen C. Richard.....    | Nov. 4 1901.....   | 206 00   |
| Chebucto Head Light and Fog Alarm.  | Capt. Richard Holland..... | Oct. 1 1906.....   | 1,180 00 |
| Chester, East, Ironbound.....       | Uriah Young.....           | Feb. 15 1884.....  | 625 00   |
| Cheticamp.....                      | Marcelin Muise.....        | Nov. 27 1896.....  | 440 00   |

\$25.00 for hand fog horn.



STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*NOVA SCOTIA—*Continued.*

| Name of station.                          | Name of lightkeeper.         | Appointed.       | Salary.  |
|---|------------------------------|------------------|----------|
|   |                              |                  | \$ cts.  |
| Chéticamp Range.....                      | Philip Burgeois.....         | May 23, 1898..   | 260 00   |
| Church Point.....                         | J. H. Saulnier.....          | Aug. 8, 1878..   | 260 00   |
| Clarke Cove Range.....                    | Archd. Campbell.....         | July 14, 1910..  | 140 00   |
| Coffins Island.....                       | James E. Wentzell.....       | June 2, 1909..   | 540 00   |
| Cold Spring Head.....                     | Willard Vanenburg.....       | Oct. 6, 1909..   | 220 00   |
| Cole Harbour.....                         | Wm. M. Munro.....            | April 23, 1907.. | 120 00   |
| Cole Harbour Range.....                   | Geo. C. Jamieson.....        | Oct. 21, 1898..  | 260 00   |
| Country Harbour.....                      | Henry Burke.....             | June 11, 1902..  | 600 00   |
| Cranberry Island Light and Fog Alarm..... | James P. Hanlon.....         | April 10, 1905.. | 1,180 00 |
| Crichton Head.....                        | H. H. Crichton.....          | May 6, 1874..    | 320 00   |
| Cross Island Light and Fog Alarm.....     | Chas. Wynaht.....            | July 1, 1910..   | 980 00   |
| Croucher Island.....                      | Geo. Croucher.....           | Jan. 31, 1883..  | 440 00   |
| Dartmouth.....                            | Wm. Patterson.....           | June 3, 1903..   | 180 00   |
| Devil Island Range, Ft and Bk. ....       | W. G. Fulker.....            | May 3, 1886..    | 680 00   |
| Dimock Point.....                         | Windsor E. Lt. & Power Co.   |                  | 130 00   |
| Digby Pier Pole.....                      | Edwin Beaman.....            | May 29, 1897..   | 140 00   |
| Dog Island.....                           | Simon Joyce.....             | July 4, 1884..   | 260 00   |
| Dover Harbour.....                        | Edward Morash.....           | Oct. 1, 1906..   | 360 00   |
| Eatonville.....                           | Stewart McAleece.....        | July 1, 1910..   | 85 00    |
| Economy Pole.....                         | Ingersoll L. McLellan.....   | May 16, 1899..   | 100 00   |
| Egg Island.....                           | Howe H. Stoddard.....        | Mar. 23, 1909..  | 645 00   |
| Eddy Point.....                           | Edward Mundell.....          | July 28, 1903..  | 625 00   |
| Flat Point Light and Fog Alarm.....       | Thos. O'Neil.....            | May 2, 1904..    | 614 58   |
| " " ".....                                | C. M. Peters.....            | Mar. 1, 1910..   | 565 42   |
| Flint Island Light and Fog Alarm.....     | * Howard Tatton.....         |                  |          |
| Fourchu Head, Light.....                  | Geo. Hardy.....              | June 16, 1909..  | 190 00   |
| Fort Point.....                           | J. E. Misener.....           | May 16, 1896..   | 285 00   |
| Fisherman Harbour.....                    | Théodore Beiswanger.....     | Dec. 8, 1905..   | 260 00   |
| Gabarus.....                              | Jas. McDonald.....           | Nov. 22, 1890..  | 290 00   |
| Gilbert Point.....                        | Jos. W. Melanson.....        | Aug. 18, 1894..  | 300 00   |
| George Island Light and Fog Bell.....     | Robt. Ross.....              | Jan. 18, 1876..  | 405 00   |
| Gillis Point.....                         | Hector McLean (M's son)..... | Dec. 18, 1897..  | 260 00   |
| Glasgow Point.....                        | Abram Clory.....             | July 15, 1894..  | 260 00   |
| Grande Digue.....                         | D. A. Kaulback.....          | Feb. 17, 1908..  | 105 00   |
| Grand Etang.....                          | Séverin B. LeBlanc.....      | Mar. 25, 1905..  | 120 00   |
| Grand Passage, Briar Island.....          | Chas. Buckman.....           | Jan. 7, 1901..   | 405 00   |
| Great Bras d'Or Range Fr.....             | Alex. Fraser.....            | May 13, 1903..   | 180 00   |
| " " ".....                                | Malcolm McLean.....          | " 13, 1903..     | 140 00   |
| Granville Centre.....                     | Henry Rooney.....            | Feb. 24, 1904..  | 140 00   |
| Green Island (Arichat).....               | Wm. A. Duann.....            | May 12, 1903..   | 680 00   |
| Gregory Island.....                       | Michael Sampson.....         | " 11, 1907..     | 260 00   |
| Guion Island.....                         | James W. Hardy.....          | Jan. 30, 1903..  | 680 00   |
| Glace Bay Range Ft.....                   | Michael McNeill.....         | Nov. 19, 1907..  | 140 00   |
| " " ".....                                | Angus McFarlane.....         | " 19, 1907..     | 140 00   |
| Guysboro.....                             | Moses C. Scott.....          | April 19, 1884.. | 345 00   |
| Harbour au Bouche.....                    | Capt. Patrick Webb.....      | Feb. 19, 1896..  | 380 00   |
| Herring Cove.....                         | Wm. Brackett.....            | Aug. 28, 1897..  | 180 00   |
| Henry Island.....                         | D. A. McLennan.....          | " 1, 1907..      | 600 00   |
| Highland Village.....                     | W. A. Hennessy.....          | May 6, 1905..    | 100 00   |
| Hobson Island.....                        | John D. Smeltzer.....        | April 10, 1900.. | 440 00   |
| Horton Bluff.....                         | Mme S. M. Rathburn.....      | Sept. 3, 1879..  | 380 00   |
| Hubbard Cove.....                         | Albert S. Coolin.....        | Oct. 31, 1903..  | 380 00   |
| Harbour Island.....                       | Chas. G. Hodgson.....        | June 16, 1908..  | 440 00   |
| Indian Harbour.....                       | Henry Boutilier.....         | " 6, 1901..      | 260 00   |
| Ingonish Island.....                      | Robt. F. Warren.....         | Sept. 17, 1903.. | 520 00   |
| " Harbour.....                            | Geo. A. Hines.....           | April 17, 1909.. | 230 00   |
| Isaacs Harbour.....                       | Ira L. Giffin.....           | April 28, 1894.. | 405 00   |
| Isle Haute.....                           | Percy E. Morris.....         | Aug. 2, 1904..   | 680 00   |
| Iona.....                                 | F. X. S. McNeil.....         | Nov 16, 1901..   | 180 00   |
| Jeddore Rock.....                         | John W. Mitchell.....        | Sept. 29, 1882.. | 600 00   |
| Jeddore Harbour, Range.....               | Jeremiah Harpell, Jr.....    | Janv. 21, 1901.. | 320 00   |

\* Temporary at \$75.00 per month with D. G. Ashton as assistant at \$1.50 per day.

SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*

NOVA SCOTIA—*Continued.*

| Name of station.                         | Name of lightkeeper.         | Appointed.       | Salary.  |
|--|------------------------------|------------------|----------|
|  |                              |                  | \$ cts.  |
| Jerome Point.....                        | Kenneth McAskill.....        | July 30, 1901..  | 405 00   |
| Jerseyman Island.....                    | Alphonse Thériault.....      | " 1 1905..       | 465 00   |
| Jordan Pier.....                         | John Frederick.....          | Dec. 19, 1905..  | 180 00   |
| Kidston Island.....                      | Donald McRae.....            | May 17, 1892..   | 320 00   |
| Kingsport.....                           | C. H. Huntley.....           | June 30, 1890..  | 160 00   |
| Ketch Harbour.....                       | Chas. Martin.....            | May 19, 1905..   | 140 00   |
| L'Ardoise, Range.....                    | M. J. Sampson.....           | June 6, 1909..   | 85 00    |
| " ".....                                 | Thos. Brymer.....            | June 6, 1909..   | 85 00    |
| Lahave.....                              | W. H. Palmer.....            | May 22, 1878..   | 345 00   |
| Lingan Head.....                         | John Walsh.....              | July 4, 1904..   | 320 00   |
| Liscomb.....                             | James M. Hemlow.....         | Jan. 2, 1908..   | 520 00   |
| Little Dyke.....                         | S. Stewart.....              | May 1, 1905..    | 100 00   |
| Little Hope.....                         | Capt. Almon Doggett.....     | Oct. 22, 1901..  | 955 00   |
| Little Loraine Harbour.....              | Patrick Gallant.....         | Jan. 19, 1900..  | 180 00   |
| Little Narrows.....                      | Alex. W. Ross.....           | May 23, 1902..   | 220 00   |
| Liverpool, Dolphin & Bridge.....         | Town of Liverpool.....       |                  | 30 00    |
| Louisbourg.....                          | Philip Price.....            | Nov. 8, 1897..   | 396 85   |
| Lockport.....                            | L. D. Orchard.....           | Jan. 1, 1877..   | 625 00   |
| Louisbourg Harbour Range.....            | Thomas Connington.....       | Oct. 6, 1897..   | 1,043 15 |
| Louisbourg Fog Alarm.....                | D. A. Campbell.....          | Mar. 20, 1902..  | 320 00   |
| Mabou (Outer).....                       | E. Doyle.....                | June 14, 1897..  | 120 00   |
| " (Inner).....                           | Roderick McLean.....         | Dec. 7, 1906..   | 120 00   |
| Mainadieu.....                           | John Pope.....               | Sept. 11, 1902.. | 465 00   |
| Maitland Wharf.....                      | Lockhart Lawrence.....       | Feb. 28, 1911..  | 80 00    |
| Margaree.....                            | John A. McRae.....           | Feb. 28, 1907..  | 600 00   |
| Margaree Harbour (Inner).....            | Miles A. Dunn.....           | June 8, 1901..   | 120 00   |
| " " (Outer).....                         | R. McLellan.....             | May 12, 1963..   | 120 00   |
| Margaretville.....                       | Capt. W. W. Gaucher.....     | March 12, 1909.. | 275 00   |
| Mary Joseph.....                         | Uriah M. Turner.....         | May 13, 1910..   | 345 00   |
| Marjories Island.....                    | Michall McDonald.....        | Sept. 22, 1909.. | 150 00   |
| Masstown Pole.....                       | G. W. Vance.....             | June 29, 1898..  | 100 00   |
| Maugers Beach Light and Front Light..... | Wm. Iceton, sr.....          | July 6, 1903..   | 980 00   |
| Meteghan River.....                      | L. C. Comeau.....            | Oct. 12, 1875..  | 180 00   |
| Minudie Wharf.....                       | Frederick Vernon.....        | May 1, 1909..    | 85 00    |
| Mitcheners Point.....                    | William Currie.....          | June 15, 1908..  | 260 00   |
| Medway Head.....                         | Wm. Atkins.....              | Nov. 22, 1909..  | 335 00   |
| Medway Harbour.....                      | Sam. F. Foster.....          | Feb. 17, 1899..  | 140 00   |
| Moser Island.....                        | Samuel Moser.....            | Nov. 6, 1885..   | 465 00   |
| Mullin's Point.....                      | James Mullins.....           | June 8, 1892..   | 320 00   |
| Munro Point.....                         | Malcolm Buchanan.....        | Oct. 25, 1905..  | 220 00   |
| McKenzie Point.....                      | Donald McAulay.....          | Aug. 24, 1909..  | 230 00   |
| Musquodoboit Harbour Range 'B'.....      | ( Arch. M. Kent.....         | April 29, 1904.. | 160 00   |
| " " " 'F'.....                           | ( Fred. Kent, assistant..... | March 11, 1908.. | 72 23    |
| McNeil's Beach.....                      | Jeremiah Kent.....           | April 29, 1904.. | 187 77   |
| McMillans Point.....                     | Lauchlin McNeil.....         | Aug. 6, 1884..   | 120 00   |
| McNab's Island.....                      | John B. Chisholm.....        | Dec. 2, 1905..   | 285 00   |
| Maastown.....                            | Mathew Lynch.....            | June 23, 1905..  | 440 00   |
| North East Harbour Range.....            | " 29, 1898..                 |                  | 100 00   |
| Negro Island.....                        | C. W. Vance.....             | June 17, 1899..  | 320 00   |
| Neil Harbour.....                        | Levi Perry.....              | July 26, 1897..  | 520 00   |
| North Canso.....                         | Byron Nickerson.....         | Aug. 14, 1899..  | 285 00   |
| Noël.....                                | A. A. Buchanan.....          | Feb. 4, 1882..   | 440 00   |
| Ouitique Island.....                     | Robie McKay.....             | April 25, 1906.. | 140 00   |
| Parker Cove.....                         | Geo. C. Davidson.....        | Feb. 16, 1907..  | 545 00   |
| Page Island.....                         | Fred. A. Burke.....          | Aug. 1, 1909..   | 150 00   |
| Parrsboro'.....                          | Thomas Milner.....           | Dec. 5, 1905..   | 345 00   |
| Pease Island.....                        | Alfred M. Powell.....        | " 6, 1888..      | 545 00   |
| Peggy Point.....                         | William Pettis.....          | May 19, 1879..   | 545 00   |
| Pennant.....                             | Thos. Baker.....             | Dec. 22, 1902..  | 520 00   |
| Petite de Grat.....                      | Sydney H. Garrison.....      | June 30, 1903..  | 180 00   |
| Pictou Bar.....                          | P. A. Gray.....              | Feb. 23, 1897..  | 320 00   |
| Pictou Custom House.....                 | E. Landry.....               | Nov. 18, 1910..  | 520 00   |
|  | Geo. H. Carmichael.....      | Oct. 13, 1910..  | 120 00   |
|  | Alex Currie.....             |                  |          |

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STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*NOVA SCOTIA—*Continued.*

| Name of station.                           | Name of lightkeeper.         | Appointed.       | Salary.  |
|--|------------------------------|------------------|----------|
|  |                              |                  | \$ cts.  |
| Pictou Island, East end.....               | Andrew McFarlane.....        | Oct. 8, 1892..   | 600 00   |
| Pictou Island Pier, West end.....          | Chas. D. Patterson.....      | March 29, 1905.. | 600 00   |
| ".....                                     | Lauchlin Rankin.....         | Nov. 7, 1910..   | 120 00   |
| Pictou Harbour Range.....                  | David Lowden.....            | July 12, 1897..  | 320 00   |
| Piper Cove.....                            | John C. McNeil.....          | Dec. 18, 1897..  | 220 00   |
| Pointe Aconi.....                          | John Charles Bonner.....     | Nov. 6, 1903..   | 320 00   |
| Pointe Prim, Light, Fog Alarm, Digby.....  | W. E. Ellis.....             | March 8, 1875..  | 1,180 00 |
| Pointe Tupper.....                         | Duncan Gillis.....           | April 1, 1906..  | 440 00   |
| Pomquet Island.....                        | M. Murphy.....               | Dec. 18, 1890..  | 520 00   |
| Porter Point.....                          | F. W. Bishop.....            | April 29, 1904.. | 180 00   |
| Portapique.....                            | Sam Creelman.....            | May 2, 1901..    | 100 00   |
| Port Bickerton.....                        | Theodore O'Hara.....         | Jan. 26, 1901..  | 285 00   |
| Port Felix.....                            | W. C. Boudrot.....           | July 16, 1902..  | 380 00   |
| Port George.....                           | Geo. M. Foster.....          | Nov. 19, 1897..  | 180 00   |
| Port Greville, Range.....                  | Ernest A. Hatfield.....      | June 29, 1908..  | 320 00   |
| Pope Harbour.....                          | Jas. Bollong.....            | Aug. 6, 1877..   | 440 00   |
| Port Hood.....                             | J. Allan McDonald.....       | May 10, 1890..   | 380 00   |
| Port Hubert.....                           | Watson Burgess.....          | July 26, 1892..  | 260 00   |
| Port Mouton.....                           | J. Oscar Campbell.....       | April 29, 1898.. | 465 00   |
| Port Maitland.....                         | A. J. Sallows.....           | Dec. 28, 1900..  | 285 00   |
| Port Lorne.....                            | George D. Corbett.....       | May 31, 1904..   | 380 00   |
| Port Wade.....                             | Chas. Slocum.....            | Feb. 1909..      | 120 00   |
| Poulamon.....                              | Bartholomew Boudrot.....     | Dec. 7, 1904..   | 345 00   |
| Pubnico.....                               | Geo. D. Amero.....           | Feb. 6, 1893..   | 465 00   |
| Pugwash.....                               | Murdock McLeod.....          | Dec. 10, 1897..  | 440 00   |
| Queensport.....                            | W. E. Ehler.....             | Aug. 13, 1906..  | 465 00   |
| Quaker Islands.....                        | Edward Fader.....            | Feb. 9, 1910..   | 405 00   |
| Red Island.....                            | John F. Campbell.....        | Nov. 30, 1901..  | 180 00   |
| Redman Head.....                           | John Croft.....              | 1908..           | 230 00   |
| *Sable Island, Humane Station.....         | R. J. Boutillier, Supt. .... | Nov. 13, 1884..  | 600 00   |
| St. Ann Harbour.....                       | Alex. Nicholson.....         | June 5, 1905..   | 260 00   |
| St. Paul Island.....                       | John Dauphinee.....          | Sept. 26, 1910.. | 600 00   |
| St. Esprit.....                            | Alex. W. Finlayson.....      | April 12, 1905.. | 680 00   |
| St. Margaret's Bay.....                    | M. B. Pearl.....             | Sept. 1, 1908..  | 680 00   |
| St. Paul Island West Point.....            | Arthur Buchanan.....         | Sept. 11, 1910.. | 600 00   |
| St. Paul Island Fog Alarm, N.E. Point..... | M. J. McLeod.....            | July 10, 1906..  | 800 00   |
| St. Paul Island, L. N.E. Point.....        | Wm. Giles.....               | Oct. 25, 1907..  | 600 00   |
| Salter's Head.....                         | Caleb Smith.....             | June 21, 1888..  | 120 00   |
| Sambro Light and Fog Alarm.....            | Alfred Gilkie.....           | Jan. 8, 1867..   | 980 00   |
| Sambro Harbour Light.....                  | John H. Findlay.....         | Dec. 7, 1899..   | 180 00   |
| Sambro Inner Island Light.....             | Ephraim Smith.....           | Jan. 3, 1900..   | 180 00   |
| Scattarie Light and Fog Alarm.....         | John T. Martell.....         | July 30, 1897..  | 1,440 00 |
| Seal Island " ".....                       | John Crowell.....            | Oct. 14, 1899..  | 1,180 00 |
| Shafners Point.....                        | Jacob W. Roblee.....         | May 29, 1897..   | 260 00   |
| Sheet Rock.....                            | Samuel Kenny.....            | June 2, 1909..   | 645 00   |
| Sheet Harbour Passage.....                 | James Wambolt.....           | May 11, 1887..   | 120 00   |
| Sand Spit (Shelburne Harbour).....         | Jas. G. Stephens.....        | March 11, 1913.. | 405 00   |
| Ship Harbour.....                          | Howard Palmer.....           | Feb. 6, 1906..   | 405 00   |
| Shule Harbour.....                         | Cap. Clifford Patterson..... | Oct. 26, 1905..  | 260 00   |
| Sissiboo.....                              | Jas. Amirault.....           | July 11, 1899..  | 320 00   |
| Spencers Island.....                       | Baxter McLellan.....         | " 21, 1904..     | 180 00   |
| Spencers Point.....                        | R. A. Spencer.....           | April 1, 1870..  | 180 00   |
| Steven Point Range.....                    | Hugh Clark.....              | March 31, 1909.. | 150 00   |
| Stoddart Island.....                       | Ephraim Larkin.....          | March 18, 1906.. | 345 00   |
| Sydney Bar.....                            | George Nunn.....             | June 20, 1872..  | 440 00   |
| Sydney Range, Fr.....                      | J. B. Rudderham.....         | Jan. 15, 1905..  | 380 00   |
| " B.....                                   | A. J. Lewis.....             | May 22, 1905..   | 260 00   |
| Terrence Bay.....                          | Samuel P. Slaunwhite.....    | Oct. 13, 1903..  | 180 00   |
| Three Top Island.....                      | W. L. Munroe.....            | " 28, 1879..     | 440 00   |
| Tor Bay.....                               | Jas. M. Webber.....          | May 10, 1898..   | 465 00   |
| Troop Point.....                           | Ralph Troop.....             | Jan. 23, 1906..  | 180 00   |
| Tusket River.....                          | Severin Leblanc.....         | July 28, 1899..  | 380 00   |

\* With board for self, family and assistants and allowance for salaries of staff.



SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—Continued.

NOVA SCOTIA—Concluded.

| Name of station.                 | Name of lightkeeper. | Appointed.      | Salary. |
|----------------------------------|----------------------|-----------------|---------|
|                                  |                      |                 | \$ cts. |
| Victoria Beach.                  | James Hinds.         | March 7, 1901.  | 180 00  |
| Wallace Harbour.                 | George Boyle.        | July 13, 1903.  | 260 00  |
| Walton Harbour.                  | Lewis E. Burgess.    | " 13, 1903.     | 260 00  |
| Wedge Island.                    | Wm. R. Church.       | March 27, 1907. | 705 00  |
| West Head Sable Island Cape.     | Wm. B. Smith, jr.    | April 12, 1890. | 345 00  |
| West Ironbound Island.           | Frederrick Wolfe.    | Dec. 19, 1910.  | 380 00  |
| Westhaver Island.                | Alfred Strum.        | Sept. 25, 1888. | 320 00  |
| Westport.                        | E. W. Suthern.       | April 12, 1890. | 545 00  |
| Whitehead.                       | Patk. Conway.        | Sept. 26, 1910. | 450 00  |
| Whycocomah.                      | Murdock Matheson.    | Sept. 11, 1884. | 120 00  |
| Woods Harbour.                   | Jas. E. Goodwin.     | Aug. 27, 1900.  | 345 00  |
| Wolfville.                       | J. L. Franklin.      | April 4, 1902.  | 180 00  |
| Yarmouth Harbour, Corner Beacon. | C. J. O'Hanly.       | May 6, 1905.    | 260 00  |

NEW BRUNSWICK.

|   |                         |                 |          |
|---|-------------------------|-----------------|----------|
| Andersons Hollow Light.                   | Aaron B. Copp.          | March 30, 1903. | 205 00   |
| Beaver Harbour.                           | J. Melvin Eldridge.     | May 2, 1904.    | 405 00   |
| Beacon (St. John Harbour).                | A. F. Shepherd.         |                 | 565 00   |
| Bliss Island.                             | James H. McLeod.        | Oct. 17, 1900.  | 625 00   |
| Bathurst.                                 | Geo. C. Sutherland.     | March 20, 1882. | 320 00   |
| Belyeas Point.                            | Mrs. Westfield Day.     | Nov. 21, 1906.  | 140 00   |
| Baie du Vin.                              | John McLeod.            | Jan. 1, 1910.   | 275 00   |
| Boutetouche Bacon.                        | H. B. Robicheaud.       | June 21, 1884.  | 180 00   |
| " Bar.                                    | Jadus P. Cormier.       | July 26, 1902.  | 320 00   |
| Big Duck Island Fog Alarm.                | Rupert Burnham.         | June 25, 1906.  | 880 00   |
| Bridge Point Light.                       | Harry Upton.            | March 14, 1910. | 125 00   |
| Belle Ile (Hatfields Landing).            | Thos. W. Spragg.        | June 27, 1903.  | 140 00   |
| Bellony Point.                            | Edward H. Egan.         | May 17, 1902.   | 220 00   |
| Cape Enrage Fog Alarm and Light.          | James G. Barbour.       | " 11, 1888.     | 980 00   |
| Cape Jourimain.                           | A. J. P. Bent.          | Jan. 26, 1901.  | 440 00   |
| Cape Tormentine.                          | J. R. Barry.            | March 26, 1906. | 220 00   |
| Caraget.                                  | G. Laintaigne.          | June 16, 1888.  | 320 00   |
| " Lower Light.                            | Frederic F. Doucet, jr. | Oct. 14, 1903.  | 120 00   |
| " "                                       | Patrice L. Légère.      | " 14, 1903.     | 120 00   |
| Coxs Point.                               | Alexander McBain.       | May 26, 1898.   | 140 00   |
| Cassies Point.                            | Placide Legere.         | June 2, 1909.   | *360 00  |
| Cape Spencer Fog Alarm.                   | John E. Collins.        | Nov. 22, 1909.  | 1,260 00 |
| Cherry Island.                            | Harry Chaffey.          | Oct. 14, 1903.  | 260 00   |
| Cocagne Range.                            | Dominique Goguen.       | " 14, 1907.     | 220 00   |
| Church Point (Boutetouche).               | D. O. Maillett.         | July 7, 1883.   | 260 60   |
| Dalhousie Harbour.                        | James Arseneau.         | June 18, 1894.  | 180 00   |
| Dipper Harbour.                           | Fenwick Belmore.        | March 12, 1895. | 205 00   |
| Douglas Island and P.W. Montgomery's Isl. | Henry McNeil.           | Jan. 1, 1880.   | 380 00   |
| East Hd. Musquash.                        | Chas. P. Hamm.          | " 14, 1879.     | 465 00   |
| Escuminac Alarm and Alarm.                | Kenneth R. McLennan.    | March 7, 1892.  | 1,180 00 |
| Fox Island Upper, Light.                  | Seymour Williston.      | June 4, 1902.   | 380 00   |
| " Lower.                                  | George Mills.           | " 23, 1897.     | 320 00   |
| Fanjoy's Point.                           | William Fanjoy.         | Déc. 15, 1897.  | 140 00   |
| Flewelling's Wharf.                       | Mary Flewelling.        | April 12, 1890. | 140 00   |
| Fort Monckton.                            | W. A. Casey.            | Jan. 1, 1909.   | 130 00   |
| Fort Polly.                               | Amos P. Belliveau.      | June 23, 1903.  | 345 00   |
| Gagetown.                                 | Fraer Fox.              | April 22, 1904. | 140 00   |
| Grindstone Island, Alarm.                 | James R. Russell.       | Jan. 13, 1899.  | 980 00   |
| Gannet Rock, Alarm.                       | Sydney Tatton.          | March 21, 1911. | 1,200 00 |
| Green Head.                               | Thos. E. Looney.        | July 14, 1886.  | 220 00   |
| Grant Beach.                              | W. A. Davidson.         | April 3, 1909.  | 190 00   |
| Gull Cove.                                | Lewis Frankland.        | Nov. 14, 1902.  | 140 00   |

\* \$25 for foghorn.



STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*NEW BRUNSWICK—*Continued.*

| Name of station.                             | Name of lightkeeper.          | Appointed.       | Salary.  |
|--|-------------------------------|------------------|----------|
|  |                               |                  | \$ cts.  |
| Goose Lake.....                              | John D. Brune.....            | May 11, 1888..   | 380 00   |
| Grand Harbour.....                           | Lloyd C. Dakin.....           | " 2, 1904..      | 625 00   |
| Grand Manan, Fog Alarm.....                  | George T. Tatton.....         | Oct. 16, 1886..  | 980 00   |
| Gray's Landing.....                          | B. F. McCutcheon.....         | March 6, 1907..  | 120 00   |
| Head Harbour Light and Fog Alarm.....        | Chas. D. Hyliard.....         | June 29, 1904..  | 1,105 00 |
| Heron Island.....                            | John A. D. Robertson.....     | April 11, 1902.. | 320 00   |
| Hendry's Point, Washademoak Light.....       | Miss A. M. Hendry.....        | March 15, 1899.. | 140 00   |
| Hay Island.....                              | Joseph Allain.....            | May 21, 1895..   | 260 00   |
| Harpers Point.....                           | J. H. Blakley.....            | July 30, 1910..  | 120 00   |
| Hampstead.....                               | Edgar B. Palmer.....          | Nov. 6, 1900..   | 140 00   |
| Jemseg.....                                  | Geo. F. Nevers.....           | " 24, 1884..     | 140 00   |
| Kouchibouguac.....                           | Henry Gagnon.....             | June 26, 1908..  | 260 00   |
| Letete Fog Alarm and Light.....              | Sydney Dines.....             | March 27, 1907.. | 780 00   |
| Light Ship, Miramichi.....                   | Capt. Robt. McLean.....       | April 12, 1902.. | 980 00   |
| Little Belledune (Miscou Gully).....         | J. A. Roberty.....            | Feb. 21, 1905..  | 380 00   |
| Little Shippegan.....                        | Robt. McConnell, Jr.....      | Sept. 9, 1887..  | 180 00   |
| Long Point Bellisle Light.....               | James A. Bates.....           | June 1, 1907..   | 140 00   |
| Machias Seal Island Light and Fog Alarm..... | W. L. Harvey.....             | July 8, 1904..   | 1,440 00 |
| McFarlane Point.....                         | Alex. McFarlane.....          | Dec. 9, 1909..   | 105 00   |
| Midgie Bluff Light.....                      | Arthur Henderson.....         | Oct. 4, 1894..   | 200 00   |
| Miscou.....                                  | Joseph L. Robichaud.....      | Nov. 11, 1902..  | 980 00   |
| Musquash.....                                | R. P. McDonald.....           | Jan. 28, 1901..  | 180 00   |
| Middle Island.....                           | Michael Murray.....           | April 10, 1902.. | 320 00   |
| Mark Point.....                              | Wm. Maloney.....              | Nov. 7, 1903..   | 220 00   |
| McMann Point.....                            | Harvey R. McMann.....         | Jan. 2, 1901..   | 140 00   |
| McFarlane Point.....                         | Alex. McFarlane.....          | Dec. 3, 1909..   | 105 00   |
| Mulholland Point.....                        | Alvin Parker.....             | June 13, 1901..  | 260 00   |
| Neguac.....                                  | John Robinson.....            | " 30, 1896..     | 320 00   |
| Neguac Range.....                            | Chas. McIntosh.....           | Dec. 10, 1892..  | 180 00   |
| Negrotown Point.....                         | E. Ross.....                  | March 5, 1878..  | 600 00   |
| Newcastle.....                               | Blackstock Matheson.....      | April 18, 1898.. | 140 00   |
| Oak Point, St. John River Light.....         | Mrs Bessie May Francombe..... | Dec. 20, 1907..  | 140 00   |
| Oromocto Shoals Light.....                   | Sadie Brennan.....            | Jan. 1, 1910..   | 150 00   |
| Oak Point (Miramichi) Light.....             | John Bowie.....               | June 2, 1906..   | 180 00   |
| Outhouse Pt. Light.....                      | Saml. R. Eagett.....          | ".....           | 140 00   |
| Partridge Island Light and Fog Alarm.....    | Hugh Andrews.....             | May 1, 1906..    | 1,440 00 |
| Pokemouche Light.....                        | Michael Hayden.....           | Oct. 17, 1888..  | 380 00   |
| Portage Island Light.....                    | Peter Morrison, Jr.....       | May 17, 1892..   | 405 00   |
| Pte Lepreaux.....                            | Robert L. Belding.....        | June 30, 1905..  | 480 00   |
| Pte Lepreaux Fog Alarm.....                  | Frank Frauley.....            | " 30, 1905..     | 960 00   |
| Pea Point Light.....                         | Elias C. Dickson.....         | Nov. 16, 1898..  | 405 00   |
| Passamaquoddy Bay Light, West.....           | Joseph Kilpatrick.....        | Feb. 3, 1898..   | 625 00   |
| " " " East.....                              | Theobald Rooney.....          | Jan. 1, 1896..   | 545 00   |
| Preston Beach.....                           | Stanislaus Preston.....       | July 11, 1889..  | 220 00   |
| Petit Rocher.....                            | J. B. Boudreau.....           | Feb. 26, 1896..  | 180 00   |
| Peek Point Light and Fog Alarm.....          | Edwin Lockhart.....           | Oct. 20, 1903..  | 680 00   |
| Poquesuide Light.....                        | Octave Hachey.....            | July 12, 1881..  | 345 00   |
| Palmer's Point.....                          | Alfred Le Bouthiller.....     | March 1, 1911..  | 285 00   |
| Pointe Brulee.....                           | Frank Gould.....              | Jan. 13, 1899..  | 130 00   |
| Pointe du Chene.....                         | Thomas Harts.....             | Feb. 17, 1905..  | 140 00   |
| Perry Point.....                             | John Carney.....              | Sept. 25, 1900.. | 140 00   |
| Quaco.....                                   | Charles Brown.....            | Nov. 25, 1884..  | 490 00   |
| " Breakwater.....                            | Fred M. Cochran.....          | Mar. 25, 1892..  | 205 00   |
| " Fog Alarm.....                             | L. B. Bradshaw.....           | Aug. 2, 1887..   | 490 00   |
| Robertson Point.....                         | Chas. W. Robertson.....       | June 30, 1897..  | 140 00   |
| Richibuctou.....                             | Peter F. Richard.....         | May 30, 1895..   | 320 00   |
| " Beacon.....                                | Jude Robichaud.....           | June 16, 1902..  | 260 00   |
| " Bar.....                                   | Joseph F. Richard.....        | June 16, 1902..  | 260 00   |
| " N. Beach.....                              | Fredk. McNeil.....            | May 3, 1909..    | 190 00   |
| Reids Point.....                             | Whitney Lamb.....             | April 1, 1909..  | 125 00   |
| Railway Wharf, Moffat Landing.....           | Geo. Cumming.....             | Jan. 1, 1880..   | 180 00   |
| Sapin Point.....                             | Victor Daigle.....            | May 28, 1903..   | 100 00   |
| South Tracadie.....                          | Wm. C. Ferguson.....          | Mar. 23, 1898..  | 260 00   |

SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—Continued.

NEW-BRUNSWICK—Concluded.

| Name of station.               | Name of lightkeeper. | Appointed.      | Salary. |
|--------------------------------|----------------------|-----------------|---------|
|                                |                      |                 | \$ cts. |
| Swallow Tail                   | Geo. Y. Dalzell      | Mar. 18, 1893.  | 625 00  |
| St. Andrew's                   | W. J. Pendlebury     | April 10, 1889. | 405 00  |
| St. Louis Gully                | Honoré H. Chiasson   | July 16, 1909.  | 150 00  |
| St. John Harbour, L. & F. Bell | Andrew Shepherd      | Dec. 9, 1909.   | 565 00  |
| Spruce Point                   | Bertie G. Hannah     | Sept. 15, 1892. | 220 00  |
| Sand Point                     | Richard Wagner       | June 7, 1883.   | 140 00  |
| Shediac                        | M. Robinson          | Dec. 29, 1873.  | 380 00  |
| Southern Wolf                  | Ethelbert Wright     | Mar. 6, 1906.   | 705 00  |
| Shippigan                      | Louis de Grace       | June 21, 1910.  | 345 00  |
| Shippigan Gully, Range Lights  | John de Grace        | June 4, 1889.   | 260 00  |
| Sheldrake Island               | John A. Morrison     | Jan. 3, 1910.   | 335 00  |
| Scuth West Head                | Thos. P. Foster      | Sept. 26, 1910. | 625 00  |
| Stonehaven                     | Mrs Elizabeth Scott  | July 8, 1904.   | 180 00  |
| The Cedars                     | Forrest Williams     | May 11, 1897.   | 140 00  |
| Tracadie                       | Fabien D. Basque     | Aug. 20, 1904.  | 380 00  |
| Tiner's Point Fog Alarm        | Alfred Splane        | Aug. 21, 1905.  | 980 00  |
| Tiner's Point Submarine Bell   | Alfred Splane        | Feb. 1908.      | 250 00  |
| Wilmots Bluff                  | J. H. True           | Sept. 12, 1899. | 140 00  |

QUEBEC AGENCY.

|                                 |                     |                 |          |
|---------------------------------|---------------------|-----------------|----------|
| Algernon Rock and Stone Pillars | George Leclerc      | July 30, 1901.  | 880 00   |
| Amherst Island                  | William Cormier     | April 26, 1871. | 520 00   |
| Amherst Wharf                   | Patrick J. Brophy   | Nov. 15, 1910.  | 80 00    |
| Anse-à-Beaufils                 | "                   | 22, 1910.       | 80 00    |
| Anse à l'Eau                    | Auguste Gingras     | April 1, 1909.  | 100 00   |
| Anse St. Jean                   | F. Lavoie           | May 13, 1889.   | 100 00   |
| Anticosti S. W. Pt.             | Z. Lemieux          | July 10, 1900.  | 880 00   |
| " S. W. Pt                      | Alfred Malouin      | " 1, 1877.      | 980 00   |
| Bagot Bluff, Anticosti, F. A.   | Emile Laprise       | April 18, 1903. | 1,180 00 |
| Barachois de Malbaie            | X. Lemieux          | Mar. 6, 1903*   | 120 00   |
| Bellechasse                     | Joseph Bilodeau     | June 15, 1903.  | 520 00   |
| Belleisle, S. W. End            | Octave Dubois       | Sept. 6, 1910.  | 1,500 00 |
| " N.E. End                      | Paul Thomas         | July 8, 1904.   | 1,700 00 |
| Bersimis "R"                    | Henri Granier       | Aug. 8, 1903.   | 180 00   |
| Bicquette                       | Louis Pinault       | Oct. 6, 1900.   | 980 00   |
| Bird Rocks                      | Wilfred Bourque     | Nov. 15, 1905.  | 1,700 00 |
| Brandy Pots                     | Alphonse Richard    | Oct. 7, 1878.   | 600 00   |
| Brion Island                    | Procule Chevrier    | June 23, 1905.  | 600 00   |
| Bonaventure River Wharf         | Alexis Bourque      | Feb. 25, 1909.  | 85 00    |
| Bonaventure Point               | Pitre Bourdage      | July 25, 1903.  | 320 00   |
| Cap à l'Aigle                   | Electric Ltr.       |                 |          |
| Cap Anguille                    | Alfred Patry        | Oct. 9, 1908.   | 1,440 00 |
| Cap Brulé                       | W. Labranche        | May 2, 1905.    | 600 00   |
| Cap au Corbeau                  | Edouard Codé        | Oct. 26, 1905.  | 120 00   |
| Cap aux Oies                    | Cap. Thos. Tremblay | May 1, 1888*    | 380 00   |
| Cape Bauld                      | Edmond Fontaine     | Sept. 1, 1905.  | 1,260 00 |
| Cap Chatte                      | Luc Côté            | July 26, 1901.  | 880 00   |
| Cap Chatte Range                | Urbain Chretien     | " 7, 1909.      | 125 00   |
| Cap à l'Est                     | Gonzague Sergerie   | Oct. 9, 1910.   | 600 00   |
| Cape Dogs                       | Ludger Bergeron     | Sept. 11, 1909. | 905 00   |
| " Despair                       | Charles Bourget     | Nov. 1, 1897*   | 600 00   |
| " Gaspé                         | Frs. Le Huquet      | Oct. 22, 1896.  | 880 00   |
| " Madeleine "B"                 | J. F. Sasseville    | June 9, 1886.   | 980 00   |
| " Norman                        | J. W. Campbell      | April 12, 1890. | 1,180 00 |
| " Ray                           | E. H. Rennie        | Oct. 19, 1884.  | 1,260 00 |
| " Rosier                        | Eug. Costin         | Nov. 4, 1890.   | 1,180 00 |
| " Salmon                        | Louis Bouchard      | May 16, 1896.   | 980 00   |
| Carleton Wharf                  | Francis Cullin      | July 12, 1907.  | 100 00   |
| " Point                         | Louis Bujold        | May 25, 1899*   | 440 00   |

STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*QUEBEC AGENCY—*Continued.*

| Name of station.            | Name of light keeper. | Appointed.      | Salary.  |
|-----------------------------|-----------------------|-----------------|----------|
|                             |                       |                 | \$ cts.  |
| <i>Chicoutimi Lights.</i>   |                       |                 |          |
| Chicoutimi Wharf            | André Harvey          | May 30, 1889.   | 100 00   |
| Post St. Martin "B"         | Frs. Gauthier         | April 22, 1907. | 120 00   |
| " " "F"                     | Alfred Pilote         | " 22, 1907.     | 120 00   |
| Riv. du Moulin "B"          | Luce Gourdeau         | May 1, 1905.    | 120 00   |
| " " "F"                     | George Tremblay       | " 1, 1905.      | 120 00   |
| Riv. Caribou "B"            | H. Simard             | Mar. 1, 1905.   | 120 00   |
| " " "F"                     | John Savard           | " 1, 1905.      | 120 00   |
| Riv. Valin "R"              | Gédéon Lavoie         | June 7, 1909.   | 90 00    |
| " " "F"                     | Maximin Lavoie        | Summer, 1893.   | 90 00    |
| Savard Valin "R"            | Dorilas Savard        | July 18, 1904.  | 180 00   |
| Chlorydorne "R"             | Magloire Coulombe     | Oct. 15, 1904.  | 180 00   |
| Crane Island                | Désiré Vézina         | Apr. 25, 1904.  | 440 00   |
| Domaine "B"                 | Xavier Emond          | May 30, 1908.   | 120 00   |
| " " "F"                     | Edouard Guérard       | " 30, 1908.     | 120 00   |
| Duthies P.                  | B. V. Willett         | Oct. 16, 1903.  | 140 00   |
| Eboulements                 | Capt. Thos. Tremblay  | Aug. 24, 1910.  | 80 00    |
| Egg Island                  | Tancrède Pelletier    | July 1, 1901.   | 680 00   |
| Entry Island                | George F. Cullins     | " 30, 1901.     | 380 00   |
| Etang du Nord               | N. Arsenault          | " 21, 1891*     | 520 00   |
| Escoumains "R"              | Saguenay Lumber Co.   | Sept. 10, 1906. | 150 00   |
| Fame Point                  | James Ascah           | " 2, 1880.      | 1,440 00 |
| Father Point                | J. McWilliams         | May 20, 1893.   | 1,440 00 |
| Flower Island               | Joseph Lavallée       | Apr. 12, 1905.  | 780 00   |
| Fox River "R"               | André Samuel          | Oct. 15, 1904.  | 180 00   |
| Gascons, Wharf              | John Mourant          | June 8, 1906.   | 100 00   |
| Gaspé Basin                 | William Lindsay       | " 14, 1900.     | 120 00   |
| Godbout                     | N. A. Comeau          | Mar. 31, 1910.  | 125 00   |
| Grande Entrée, Range Lights | André Turbide         | Apr. 6, 1907.   | 140 00   |
| Grande Ile Kamouraska       | Arthur Levesque       | Feb. 9, 1901.   | 600 00   |
| Grand Papos Wharf           | Edward Malloy         | Apr. 12, 1910.  | 80 00    |
| Grande Rivière              | William Bisson        | Oct. 22, 1896.  | *220 00  |
| " Wharf                     | J. B. Couture         | May 1, 1903.    | 100 00   |
| Grande Vallée, Range        | A. Fournier           | Oct. 15, 1904.  | 180 00   |
| Green Island                | R. W. Lindsay         | Sept. 28, 1888. | 880 00   |
| Greenly Island              | Napoléon Côté         | Oct. 12, 1903.  | 1,440 00 |
| Griffons, Cove "R"          | H. Boulet             | June 29, 1908.  | 180 00   |
| Grosse Roche                | Nazaire Morin         | " 25, 1906.     | 500 00   |
| Heath Point                 | Christopher Huber     | July 27, 1907.  | 980 00   |
| Hospital Rock               | Victor Lavoie         | Apr. 1, 1909.   | 325 00   |
| Ile de Mai                  | R. H. Scougall        | Aug. 4, 1910.   | 180 00   |
| Ile au Belier               | Wm. Gaudreault        | Oct. 30, 1901.  | 150 00   |
| Ile aux Coudres             | Eusébe Boudreault     | Apr. 20, 1906.  | 100 00   |
| Ile Bonaventure             | J. B. Bajold          | May 5, 1909.    | 85 00    |
| Little Métis                | Elisée Caron          | " 29, 1909.     | 540 00   |
| Magpie "R"                  | Albert Dupuis         | Sept. 14, 1907. | 180 00   |
| Maquereau Point             | A. Bertrand           | Dec. 21, 1877.  | *440 00  |
| Matane                      | Joseph Banville       | Feb. 1, 1897.   | 520 00   |
| Mont Louis "R"              | Louis Létourneau      | May 22, 1906.   | 180 00   |
| St. Thomas de Montmagny     | Eugene Nicole         | " 12, 1906.     | 120 00   |
| Murray Bay                  | Electric Light        | Dec. 31, 1907.  | 260 00   |
| Natashquan                  | Dovilas Landry        | " 1, 1909.      | 90 00    |
| New Carlisle, Wharf         | John Chisholm         | Jan. 3, 1897.   | *220 00  |
| Newport                     | Salomon Grenier       | June 3, 1897.   | 80 00    |
| New Richmond, Wharf         | William Campbell      | Feb. 17, 1910.  | 80 00    |
| Oak Point, Ristigouche, "R" | Thomas Harper, Jr.    | Jan. 1, 1907.   | 150 00   |
| <i>Orleans Range—</i>       |                       |                 |          |
| Ange-Gardien "B"            | Olivier Paré          | Nov. 10, 1902.  | 120 00   |
| " " "F"                     | Jean Gagné            | Sept. 28, 1909. | 105 00   |
| Sainte-Famille "B"          | Alphonse Pâquet       | Oct. 19, 1885.  | 120 00   |
| " " "F"                     | Alfred Poulin         | " 26, 1896.     | 130 00   |
| Saint-Pierre "B"            | Jacques Roberge       | May 16, 1908.   | 120 00   |
| " " "F"                     | Olivier Vézina        | Oct. 28, 1897.  | 120 00   |

\* With \$25 for blowing foghorn.



SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—Continued.

QUEBEC AGENCY—Concluded.

| Name of station.              | Name of light keeper.           | Appointed.       | Salary.  |
|-------------------------------|---------------------------------|------------------|----------|
|                               |                                 |                  | \$ cts.  |
| Paspébiac.....                | John Loisel.....                | Aug. 27, 1899..  | *260 00  |
| Percé, Wharf.....             | Emesie Bourget Jr.....          | Jan. 20, 1909..  | 85 00    |
| Perroquet, Island.....        | Placide Vigneau.....            | Sept. 19, 1892.. | 700 00   |
| Pilgrims.....                 | H. Morin.....                   | Apr. 29, 1898..  | 520 00   |
| Point Peter.....              | John Thomas St. Croix.....      | Sept. 11, 1909.. | *540 00  |
| Point Amour.....              | Thomas Wyatt.....               | Oct. 18, 1889..  | 1,440 00 |
| Pointe à Basile "B".....      | Antonio Demers.....             | July 22, 1904..  | 220 00   |
| " " "F".....                  | Elzéar Douville.....            | Feb. 6, 1904..   | 220 00   |
| Point aux Esquimaux, "R"..... | J. F. Boudreault.....           | Oct. 29, 1907..  | 188 00   |
| " aux Orignaux.....           | Dominique Levesque.....         | " 5, 1903..      | 440 00   |
| " Bleue.....                  | Armand Tessier.....             | June 9, 1904..   | 100 00   |
| " des Monts.....              | Victor Fafard.....              | Aug. 1, 1899..   | 880 00   |
| " Noire "R".....              | J. E. Boulianne.....            | Jan. 18, 1904..  | *320 00  |
| " Riche.....                  | N. Breton.....                  | May 16, 1896..   | 680 00   |
| Port-Daniel.....              | F. X. Langlois.....             | Feb. 22, 1907..  | 120 00   |
| " West.....                   | Arthur Horrie.....              | Jan. 1, 1907..   | 180 00   |
| Portneuf (en-bas), "R".....   | Pierre Poitras.....             | Oct. 16, 1904..  | 180 00   |
| " " ".....                    | Edmond Tremblay.....            | May 7, 1903..    | 490 00   |
| Quebec Harbour.....           | Quebec Harbour Commission.....  |                  | 60 00    |
| Red Islet.....                | P. T. Fraser.....               | April 28, 1894.. | 705 00   |
| Rimouski Wharf.....           | Ubalde Lavoie.....              | May 22, 1906..   | 100 00   |
| Rivière à la Martre.....      | August Leclerc.....             | Sept. 3, 1902..  | 1,180 00 |
| " à la Pipe.....              | Alex. Morin.....                | Oct. 3, 1901..   | 120 00   |
| Rivière du Loup.....          | F. E. Gilbert.....              | July 2, 1897..   | 120 00   |
| Roberval.....                 | Roberval Electric Light Co..... | June 28, 1898..  | 100 00   |
| Sand Beach Point.....         | Thomas Kennedy.....             | Aug. 9, 1904..   | †600 00  |
| Sainte-Anne "B".....          | Alphonse Poulin.....            | Oct. 26, 1898..  | 120 00   |
| " " "F".....                  | César Dufour.....               | 1909..           | 120 00   |
| St. Alphonse.....             | Pitre Tremblay.....             | June 19, 1895..  | 100 00   |
| St. Antoine Range.....        | Léonidas Fréchette.....         | March 4, 1902..  | 140 00   |
| " " ".....                    | François Doré.....              | April 14, 1903.. | 180 00   |
| St Charles de Caplan.....     | Frank Dion.....                 | May 10, 1909..   | 85 00    |
| St. Godfroi Wharf.....        | Jacques Grenier.....            | " 3, 1909..      | 85 00    |
| Ste Anne des Monts "R".....   | X. Lefrançois.....              | Oct. 15, 1904..  | 180 00   |
| Ste Croix.....                | Willie A. Thurber.....          | Mar. 18, 1901..  | 260 00   |
| " " "R" "F".....              | Veuve D. Racette.....           | Dec. 1900..      | 120 00   |
| " " "B".....                  | T. Croteau.....                 | Mar. 28, 1901..  | 120 00   |
| St. François, "B".....        | Louis Marceau.....              | April 1, 1884..  | 140 00   |
| " " "F".....                  | Jos. Lepage, Jr.....            | " 20, 1876..     | 125 00   |
| St. Iréné.....                | Electric Light.....             |                  |          |
| St. Jean, I. O.....           | Théophile Pouliot.....          | June 21, 1909..  | 335 00   |
| Ste. Félicité F. A.....       | François Bélanger.....          | Jan. 14, 1905..  | 780 00   |
| St. Omer Wharf.....           | Joseph E. Landry.....           | Nov. 12, 1910..  | 80 00    |
| St. Pancras Pt.....           | Pamphile Gravel.....            | April 21, 1910.. | 335 00   |
| St. Siméon Wharf.....         | Henri Savard.....               | Oct. 25, 1906..  | 100 00   |
| St. Laurent, I. O.....        | Joachim Godbout.....            | April 15, 1904.. | 380 00   |
| St. Pétronille.....           | Nap. Ferland.....               | Sept. 3, 1904..  | 320 00   |
| Seven Islands.....            | Horace Desmeules.....           | May 20, 1898..   | 1,080 00 |
| Trois-Pistoles Wharf.....     | Cyrice LeBel.....               | Oct. 25, 1907..  | 125 00   |
| Upper Traverse Pier.....      | Alfred Fournier.....            | April 14, 1900.. | †980 00  |

\* \$25 for blowing Fog horn.

† \$25 for Fog bell.



STATEMENT giving Names of Stations and Lightkeepers, &c.—*Continued*

## MONTREAL AGENCY.

| Name of station.            | Name of lightkeeper.    | Appointed.      | Salary. |
|-----------------------------|-------------------------|-----------------|---------|
|                             |                         |                 | \$ cts. |
| Argenteuil Baie.            | Pierre Giroux.          | Apr. 12, 1909.  | 125 00  |
| Ash and Bloody Islands, "R" | Jas. A. McGee.          | May 26, 1903.   | 20 00   |
| Barre à Boulard, "F"        | Nap. Daigle.            | " 26, 1904.     | 320 00  |
| " " "B"                     | Philéas Abel.           | June 23, 1903.  | 140 00  |
| Batiscan, "F"               | Arcade La Haie.         | May 26, 1909.   | 190 00  |
| " " "B"                     | Joseph L. Brunel.       | Apr. 27, 1905.  | 140 00  |
| Becancour, "F"              | Omar Gingras.           | Oct. 24, 1905.  | 260 00  |
| " " "B"                     | A. Tourigny.            | " 24, 1905.     | 180 00  |
| Beauharnois.                | Alphonse Daoust.        | Apr. 14, 1903.  | 320 00  |
| Bellerive Park.             | Chas. Roy.              | Aug. 5, 1904.   | 260 00  |
| Boucherville.               | Hiliodore Carrière.     | " 26, 1903.     | 140 00  |
| Cap Charles, "B"            | Amédée Baron.           | June 26, 1901.  | 140 00  |
| " " "F"                     | Alcide Boisvert.        | " 26, 1901.     | 140 00  |
| Cap Madeleine, "F"          | Moïse Hébert.           | May 11, 1888.   | 140 00  |
| " " "B"                     | G. Vaillancourt.        | Oct. 1, 1906.   | 180 00  |
| " " "U.R. "F"               | Pierre Toupin.          | Apr. 26, 1905.  | 140 00  |
| " " "B"                     | Elzéar Beaumier.        | Oct. 1, 1905.   | 180 00  |
| " " Village, "R"            | Ernest Lacourse.        | Mar. 13, 1906.  | 260 00  |
| Caron Point.                | Honoré Sauvé.           | May 1, 1889.    | 120 00  |
| Champlain, "B"              | Louis Bertrand.         | Sept. 12, 1902. | 180 00  |
| " " "F"                     | Philippe L. Carignan.   | Oct. 1, 1902.   | 140 00  |
| " " Upper, "B"              | Louis Bothier.          | Apr. 1, 1906.   | 180 00  |
| " " "F"                     | Octave Massicotte.      | Oct. 20, 1910.  | 120 00  |
| Chambly Basin, "R"          | Jos. de Senneville.     | May 26, 1907.   | 220 00  |
| " Canton, "R"               | Joseph Savage.          | " 10, 1907.     | 220 00  |
| Contrecoeur Course, "B"     | Norbert Duval.          | Apr. 22, 1904.  | 180 00  |
| " " "F"                     | Jos. Arpin.             | Sept. 12, 1902. | 140 00  |
| Contrecoeur Trav., "B"      | Alfred Lacroix.         | July 26, 1904.  | 180 00  |
| " " "F"                     | Joseph Alcidas Lacroix. | Apr. 14, 1904.  | 150 00  |
| " " Verchères "B"           | Ernest Guyon.           | Nov. 11, 1904.  | 220 00  |
| " " "F"                     | Honoré Tétrault.        | " 11, 1904.     | 220 00  |
| Dorval and Pte. Claire.     | Benj. Gloude.           | Aug. 1, 1907.   | 400 00  |
| Gallia Bay, U.R.            | Elzéar Cantara.         | May 3, 1904.    | 350 00  |
| " L.R.                      | Louis Péloquin.         | June 8, 1906.   | 350 00  |
| Guard Pier.                 | Benj. Rodier.           | Sept. 10, 1907. | 500 00  |
| Gentilly, "B"               | Delphis Mailhot.        | Apr. 2, 1907.   | 220 00  |
| " " "F"                     | Alphonse Lebleu.        | " 6, 1907.      | 320 00  |
| Graham, Ont., "F"           | Wm. Graham.             | Dec. 19, 1904.  | 100 00  |
| " " "B"                     | Xavier Sicard.          | Apr. 29, 1905.  | 100 00  |
| Grenville Range.            | William Davison.        | Mar. 29, 1910.  | 220 00  |
| Green Shoal.                | Albert Laberge.         | May 20, 1902.   | 260 00  |
| Grondines, "B"              | Jos. Sauvageau.         | June 20, 1904.  | 180 00  |
| " " "F"                     | Eugène Mayrand.         | " 20, 1904.     | 260 00  |
| " " Pte., "B"               | Émile Houde.            | " 20, 1904.     | 180 00  |
| " " "F"                     | Achille Sauvageau.      | " 20, 1904.     | 380 00  |
| Hochelaga, "R"              | Ulric Paquet.           | " 20, 1904.     | 220 00  |
| Ile à la Bague.             | Louis Dupuis.           | Apr. 14, 1903.  | 260 00  |
| Ile à l'Aigle, B "R"        | Eus. Savarie.           | May 1, 1903.    | 180 00  |
| " " "F"                     | F. X. Lapointe.         | " 1, 1903.      | 180 00  |
| Ile de Pads, "R"            | Zotique Courchéne.      | Aug. 8, 1907.   | 380 00  |
| Ile des Barques.            | Omer Salvail.           | May 6, 1897.    | 380 00  |
| Ile de Grâce, "B"           | Louis Letendre.         | " 1, 1906.      | 180 00  |
| " " "F"                     | Edouard Paul.           | Sept. 7, 1871.  | 320 00  |
| " du Moine, "B"             | Paul Mongeau.           | Dec. 27, 1906.  | 220 00  |
| " " "F"                     | Étienne Provençal.      | " 27, 1906.     | 180 00  |
| " au Raisin, "R"            | Louis Boucher.          | Apr. 13, 1898.  | 380 00  |
| " Bouchard, "B"             | Alphonse Chicoine, jr.  | June 16, 1903.  | 150 00  |
| " " "F"                     | Ivon Laporte.           | Apr. 21, 1902.  | 220 00  |
| " Deslauriers, "F"          | Nap. Langevin.          | Dec. 18, 1906.  | 220 00  |
| " " "B"                     | Ph. Choquet.            | Mar. 13, 1908.  | 140 00  |
| " Ronde.                    | Herman Charland.        | Aug. 1, 1907.   | 500 00  |
| " Perrot.                   | Andrew McNab.           | May 20, 1905.   | 180 00  |
| " Ste. Thérèse, U.R.        | Sam Reeves.             | Oct. 12, 1870.  | 380 00  |
| " " L.R.                    | Joseph Malo.            | Feb. 1, 1897.   | 220 00  |
| Jones Island.               | Joseph Charlebois.      | Apr. 22, 1909.  | 125 00  |

SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*

MONTREAL AGENCY—*Continued.*

| Name of station.                     | Name of lightkeeper.    | Appointed.        | Salary. |
|--------------------------------------|-------------------------|-------------------|---------|
|                                      |                         |                   | \$ c.   |
| Lacolle.....                         | W. G. Whitman.....      | Jan. 18, 1904...  | 220 00  |
| L'Anglais Pte.....                   | Antoine Langlois.....   | July 11, 1888...  | 220 00  |
| Lake Memphremagog :—                 |                         |                   |         |
| Black Point.....                     | J. H. Peters.....       | June 1, 1881...   | 100 00  |
| Lead Mines.....                      | W. Wheeler.....         | June 1, 1881...   | 100 00  |
| Molson Island.....                   | Mile E. G. Molson.....  | May .., 1878...   | 130 00  |
| Georgeville.....                     | C. E. Martel.....       | May 19, 1891...   | 100 00  |
| Wadleigh Point.....                  | J. A. Patterson.....    | June 1, 1891...   | 100 00  |
| Witch Rock.....                      | D. E. Peters.....       | " 1, 1891...      | 260 00  |
| Lachine and Range.....               | Arthur Lizotte.....     | " ..              | 260 00  |
| Longue Pointe and Trav. Range.....   | Arthur Valiquette.....  | " ..              | 180 00  |
| L'Original, Ont.....                 | Grégoire Séguin.....    | May 8, 1894...    | 180 00  |
| Louisville "R".....                  | Onésime Plante.....     | June 23, 1907...  | 220 00  |
| Lavaltrie "R".....                   | Eloi Lacombe.....       | " 2, 1909...      | 335 00  |
| Light Ship No. 3 (L. St. Peter)..... | J. B. Weaner.....       | May 9, 1904...    | 680 00  |
| L'Islet Richelieu.....               | Jos. Auger.....         | Jan. 20, 1905...  | 220 00  |
| Lotbinière "B".....                  | George Beaudet.....     | " 4, 1883...      | 140 00  |
| " " "F".....                         | Mme L. Beaudet.....     | Sept. 3, 1903...  | 140 00  |
| McTavish Pt.....                     | J. Campbell.....        | Nov. 18, 1896...  | 180 00  |
| Nicolet River "B".....               | Edmond Héroux.....      | Dec. 5, 1906...   | 180 00  |
| " " "F".....                         | Didier Héroux.....      | " 5, 1906...      | 320 00  |
| North half Way Pt. "R".....          | Joseph Lord.....        | May 5, 1903...    | 260 00  |
| Oka.....                             | Gédéon Lamouche.....    | Nov. 3, 1910...   | 120 00  |
| Oka Wharf.....                       | D. Guindon.....         | " 3, 1910...      | 80 00   |
| Papineauville.....                   | Joseph Chabot.....      | June 17, 1897...  | 180 00  |
| Petite Trav. Contrecoeur "B".....    | Oliva Casse.....        | Nov. 18, 1910...  | 140 00  |
| " " "F".....                         | Louis Caisse.....       | April 22, 1904... | 140 00  |
| Platon Range.....                    | Chas. Beaudet.....      | Aug. 24, 1894...  | 220 00  |
| Pointe à Cadieux.....                | Simon Poirier.....      | May 4, 1904...    | 260 00  |
| Pointe aux Anglais.....              | Lucas H. Masson.....    | July 10, 1907...  | 320 00  |
| Pointe aux Citrouilles.....          | Wm. Brunnelle.....      | May 26, 1908...   | 275 00  |
| Pointe du Lac.....                   | Sylva Paquin.....       | " 2, 1900...      | 180 00  |
| Portneuf Range.....                  | Josephine Rodrique..... | Dec. —, 1900...   | 380 00  |
| Port St. Francis.....                | Frs Manseau.....        | " ..              | 380 00  |
| Repentigny "B".....                  | L. J. Rivet.....        | April 28, 1894... | 140 00  |
| " " "F".....                         | J. B. Lachapelle.....   | Feb. 1, 1861...   | 140 00  |
| Rigaud.....                          | Onésiphore Malette..... | Sept. 14, 1910... | 180 00  |
| Richelieu River New Lights—          |                         |                   |         |
| Batture St. Antoine.....             | Arthur Collette.....    | Sept. 15, 1910... | 25 00   |
| Cardinal Traverse.....               | Pierre Morin.....       | Nov. 23, 1910...  | 25 00   |
| Church Pt. Trav. "B".....            | Félix Messier.....      | Oct. 6, 1910...   | 12 50   |
| " " "F".....                         | Alcime Bourias.....     | " 6, 1910...      | 12 50   |
| Hébert Point.....                    | Xavier Hébert.....      | Sept. 30, 1910... | 25 00   |
| Laperle Trav.....                    | Ls. Jussaume.....       | Nov. 23, 1910...  | 25 00   |
| Marcotte Traverse.....               | Flavien Marcotte.....   | Sept. 15, 1910... | 25 00   |
| Petite Ile Course.....               | Elie Leblanc.....       | Sept. 30, 1910... | 25 00   |
| St. Charles Point.....               | Arsène Messier.....     | " 30, 1910...     | 25 00   |
| St. Marc Point.....                  | Xiste Préfontaine.....  | Oct. 15, 1910...  | 25 00   |
| St. Onge Traverse.....               | Alfred Larivière.....   | Nov. 23, 1910...  | 25 00   |
| St. Ours Locks.....                  | Nap. Auger.....         | Oct. 19, 1910...  | 25 00   |
| Windmill Point Trav.....             | Roch Dansereau.....     | Sept. 15, 1910... | 25 00   |
| Rivière St. François.....            | Philéas Desmarais.....  | July 2, 1897...   | 260 00  |
| St. Anne de Sorel "B".....           | Pierre Cournoyer.....   | Mar. 28, 1906...  | 180 00  |
| " " "F".....                         | Frs Lanciault.....      | " 28, 1906...     | 140 00  |
| St. Anne de Bellevue.....            | J. L. Stoker.....       | May 20, 1902...   | 220 00  |
| St. Anne Lock.....                   | F. H. Demers.....       | " 17, 1907...     | 140 00  |
| St. Emélie "B".....                  | Emery Filteau.....      | Mar. 16, 1905...  | 140 00  |
| St. Emélie "F".....                  | A. Laliberté.....       | Sept. 24, 1888... | 120 00  |
| St. Jean Pier.....                   | Ernest Menard.....      | April 1, 1909...  | 220 00  |
| St. Ours, Trav. "F".....             | J. B. Laporte.....      | " 26, 1904...     | 220 00  |
| " " "B".....                         | Anathase Gaudette.....  | Oct. —, 1908...   | 160 00  |
| St. Pierre les Becquets.....         | M.O. Tousignant.....    | May 26, 1901...   | 100 00  |
| St. Placide.....                     | Philibert Lefebvre..... | Oct. 1, 1909...   | 230 00  |
| St. Valentine Range.....             | Alfred Martin.....      | June 30, 1909...  | 190 00  |

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STATEMENT giving names of stations and lightkeepers, &amp;c.—Continued.

## MONTREAL AGENCY—Concluded.

| Name of station.         | Name of lightkeeper.     | Appointed.       | Salary. |
|--------------------------|--------------------------|------------------|---------|
|                          |                          |                  | \$ cts. |
| Sorel Harbour.....       | R & O. Nav. Co.....      | Sept. 6, 1854..  | 85 00   |
| Three Rivers.....        | J. W. Luckerhoff.....    | " 9, 1908..      | 180 00  |
| Upper Champlain "B"..... | Louis Pothier.....       | April 1, 1906..  | 136 00  |
| " " "F".....             | O. Massicotte.....       | " 1, 1906..      | 120 00  |
| Varennes.....            | Azarie Geoffrion.....    | May —, 1903..    | 120 00  |
| Verchères Trav. "B"..... | Philéas Charbonneau..... | April 31, 1902.. | 120 00  |
| " " "F".....             | F. X. Chicoine.....      | " 21, 1902..     | 140 00  |
| " Village "B".....       | Félix Bousquet.....      | " 21, 1902..     | 120 00  |
| " " "F".....             | J. s. Guyon.....         | " 21, 1903..     | 140 00  |
| Way Channel.....         | Moïse Beauchamp.....     | Nov. 20, 1906..  | 220 00  |

## ONTARIO DIVISION.

|                             |                           |                   |          |
|-----------------------------|---------------------------|-------------------|----------|
| Allumette, Island.....      | John Cox, jr. ....        | June 22, 1887...  | 180 00   |
| " Lake.....                 | John T. Manders.....      | Aug. 7, 1907...   | 180 00   |
| Arnprior Island.....        | William Kilroy.....       | Oct. 1, 1905...   | 260 00   |
| Aylmer Island.....          | Francis Boucher.....      | May 3, 1907...    | 260 00   |
| Bamford Island.....         | Robert Bamford.....       | June 21, 1888...  | *380 00  |
| Barriefield Common 'R'..... | William Murray.....       | May 17, 1900...   | 260 00   |
| Baskin Wharf.....           | Silas Sullivan.....       | Dec. 22, 1896...  | 220 00   |
| Battle Island.....          | C. S. McKay.....          | Aug. 27, 1877...  | 680 00   |
| Belleville.....             | J. C. Weir.....           | Apr. 4, 1901...   | 320 00   |
| Bishops Bay.....            | Isaac Larkins.....        | Sept. 5, 1910...  | 220 00   |
| Black Bear Island.....      | Daniel Matheson.....      |                   | 380 00   |
| Blind River Range.....      | W. H. McGauley.....       | Apr. 28, 1908...  | 60 00    |
| Bois Blanc.....             | Chas R. Hackett.....      |                   | 520 00   |
| Boyd Island.....            | Mme Elizabeth Martin..... | Jan. 6, 1905...   | 380 00   |
| Brébeuf.....                | William J. Baxter.....    | May 23, 1885...   | 440 00   |
| Brighton.....               | H. V. Simpson.....        | " " 1888...       | 540 00   |
| Bronte.....                 | Chas. Osborne.....        | Oct. 20, 1906...  | 260 00   |
| Bruce Mines.....            | Wm. Fleming.....          | Mar. 31, 1909...  | 85 00    |
| Buckoms Point.....          | Godfrey Ouellet.....      | Feb. 23, 1884...  | 260 00   |
| Burlington Beach.....       | Thomas Lundy.....         | May 2, 1905...    | 730 00   |
| Byng Inlet.....             | Louis Lamondin.....       | July 20, 1901...  | *520 00  |
| Cabot Head.....             | Charles Webster.....      | May 10, 1898...   | 1,180 00 |
| Campbell Island.....        | Robert Wilson.....        | Jan. 8, 1905...   | 260 00   |
| Cape Robert.....            | N. Matheson.....          | Nov. 13, 1902...  | 440 00   |
| Cape Croker.....            | Wm J. Chapman.....        | Apr. 27, 1910...  | 980 00   |
| Caribou Island.....         | Antoine Boucher.....      | May 3, 1907...    | 1,440 00 |
| Cerebe Lake.....            | John Schade.....          | Aug. 29, 1906...  | 320 00   |
| Centre Brother Island.....  | D. Wemp.....              | Jan. 9, 1901...   | 320 00   |
| Chantry Island.....         | Malcolm McIver.....       | Apr. 1, 1907...   | 680 00   |
| Chenal Ecarté.....          | Peter Willis.....         | Dec. 3, 1908...   | 150 00   |
| Cherry Island.....          | I. S. Johnson.....        | Nov. 5, 1883...   | 380 00   |
| Christian Island.....       | Allan Collins.....        | Mar. 25, 1881...  | 600 00   |
| Clapperton Island.....      | Henry F. Baker.....       | Dec. 2, 1895...   | *440 00  |
| Cobourg Fog Alarm.....      | John Lavis.....           | July 5, 1910...   | 400 00   |
| Cobourg.....                | Robert Gordon.....        | May 16, 1883...   | †240 00  |
| Colchester Reef.....        | †† Fred. Malott.....      | **Mar. 6, 1888... | 880 00   |
| Cole Shoal.....             | R. P. Boyd.....           | Apr. 9, 1884...   | 380 00   |
| Collingwood.....            | Jas. W. Luman.....        | Jan. 2, 1904...   | *520 00  |
| Coppermine Point.....       | Frank E. Roussain.....    | Apr. 1, 1909...   | 180 00   |
| Corbay Point.....           | Joseph Daviau.....        | May 27, 1890...   | *440 00  |
| Corunna.....                | W. J. Scott.....          | Apr. 23, 1901...  | 220 00   |
| Coteau Landing.....         | Thos. Filiatreault.....   | May 27, 1890...   | 180 00   |
| Coulouge Lake.....          | Evang. Bertrand.....      | Apr. 2, 1892...   | 180 00   |

\* \$25.00 for blowing Fog horn.

† \$30.00 per month extra in winter, for lighting.

\*\* \$25.00 for Fog Bell.

†† Transferred from Pelee Passage.



SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—Continued.

ONTARIO DIVISION—Continued.

| Name of station.                           | Name of lightkeeper.      | Appointed.       | Salary.  |
|--|---------------------------|------------------|----------|
|  |                           |                  | \$ cts.  |
| Cove Island.....                           | Kenneth McLeod.....       | June 19, 1903... | 1,180 00 |
| Darlington.....                            | Port Darling Har. Co..... | .....1886..      | 100 00   |
| Deep River Island.....                     | Jos. Beauchamp.....       | .....1908..      | 180 00   |
| Deseronto.....                             | Rathbun Lumber Co.....    | Oct. 14, 1884..  | 200 00   |
| Eddy Wharf Range.....                      | Eddy Bros.....            | " 1, 1905..      | 60 00    |
| False Ducks.....                           | Darland Dulmage.....      | May 19, 1903..   | 980 00   |
| Ferris Island.....                         | J. Morriseau.....         | Mar. 24, 1898..  | 320 00   |
| Flowerpot Island.....                      | D. Smith.....             | Oct. 6, 1909..   | 260 00   |
| Fort William, Upper Ottawa.....            | C. L. McCool.....         | Jan. 1, 1911..   | 100 00   |
| Fox Island.....                            | Leslie Prosser.....       | Sept. 14, 1896.. | 260 00   |
| Frenchmans Bay.....                        | Wm. O'Brien.....          | Apr. 14, 1904..  | 220 00   |
| French River.....                          | Mrs. E. B. Borron.....    | Jan. 20, 1903..  | 680 00   |
| Gananoque Narrows and Jackstraw Shoal..... | Mrs. Manly Cross.....     | Jan. 2, 1908..   | 600 00   |
| Gargantua.....                             | Louis Miron.....          | Oct. 26, 1899..  | 600 00   |
| Giants Tomb.....                           | A. H. Griffith.....       | Sept. 17, 1898.. | 380 00   |
| Gibraltar Point.....                       | P. J. McSherry.....       | May 2, 1905..    | 440 00   |
| Goderich Lights.....                       | Robert Campbell.....      | June 9, 1886..   | 460 00   |
| " Beacon.....                              | ".....                    | " 9, 1886..      | 50 00    |
| Gore Bay.....                              | Angus Matheson.....       | July 10, 1903..  | 440 00   |
| Gravenhurst Narrows.....                   | Isaac Barnes.....         | Mar. 20, 1906..  | 180 00   |
| Great Duck Island.....                     | John Purvis.....          | May 9, 1898..    | 1,180 00 |
| Grenadier Island.....                      | Delbert Root.....         | " 20, 1902..     | 290 00   |
| Griffith Island.....                       | W. S. Boyd.....           | " 14, 1889..     | *600 00  |
| Hamilton Island.....                       | René Casgrain.....        | April 6, 1906..  | 380 00   |
| Hope Island.....                           | Charles Vallée.....       | " 20, 1899..     | 555 00   |
| do.....                                    | Peter Leblanc.....        | Mar. 12, 1909..  | 625 00   |
| Jackfish Bay.....                          | Ben. Almos.....           | Oct. 1, 1907..   | 90 00    |
| Kagawong.....                              | W. M. Boyd.....           | April 13, 1893.. | 120 00   |
| Kaministiquia.....                         | John Armstrong.....       | " 28, 1894..     | 380 00   |
| Killarney.....                             | Frank Rogue.....          | Feb. 28, 1905..  | 440 00   |
| Kincardine.....                            | Thos. McGaw, jr.....      | June 13, 1889..  | 600 00   |
| Kingsville.....                            | W. H. Black.....          | July 27, 1902..  | 260 00   |
| Knapp Point.....                           | J. J. Brophy.....         | May 9, 1905..    | *260 00  |
| Knights Point.....                         | William Shannon.....      | Sept. 27, 1866.. | 600 00   |
| Lamb Island.....                           | Andrew Alexander.....     | April 26, 1897.. | 680 00   |
| Lancaster Bar.....                         | J. J. Munroe.....         | June 8, 1892..   | 520 00   |
| Leamington.....                            | F. H. C. Conover.....     | April 28, 1885.. | 260 00   |
| Lime Kiln Crossing.....                    | Stephen Pettypiece.....   | May 11, 1888..   | 350 00   |
| Lions Head.....                            | Charles Knapp.....        | Oct. 28, 1903..  | 100 00   |
| Little Current.....                        | David Boyter.....         | April 22, 1903.. | 440 00   |
| Lonely Island.....                         | Jean Haitse.....          | May 11, 1885..   | *880 00  |
| Long Point, East end.....                  | S. B. Cook.....           | June 9, 1897..   | 1,180 00 |
| " West ".....                              | F. E. Mason.....          | " 3, 1901..      | 600 00   |
| Lower Narrows.....                         | J. B. Leblanc.....        | Jan. 4, 1904..   | 180 00   |
| Lyal Island.....                           | John McKay.....           | Oct. 27, 1884..  | 680 00   |
| Manitowaning.....                          | John Gourley, jr.....     | July 2, 1900..   | 220 00   |
| Meaford.....                               | Samuel Dutcher.....       | May 7, 1877..    | 260 00   |
| Michipicoten Harbour.....                  | W. T. Richardson.....     | Sept. 27, 1900.. | 380 00   |
| Michipicoten Island.....                   | Chas. Daviau.....         | June 29, 1910..  | 520 00   |
| Middle Island.....                         | John L. Lidwell.....      | June 10, 1889..  | 520 00   |
| Midland Range.....                         | Nap. Somers.....          | June 19, 1900..  | 320 00   |
| Mississagi Strait.....                     | J. H. Ball.....           | May 7, 1900..    | 1,180 00 |
| Mississagi Island.....                     | L. D. McDonald.....       | " 16, 1896..     | 600 00   |
| Mohawk Island.....                         | R. O. Smithers.....       | Mar. 31, 1896..  | 600 00   |
| Morris Island.....                         | W. E. Rowan.....          | Feb. 16, 1910..  | 180 00   |
| McKies Point.....                          | Dosithe Daoust.....       | Sept. 21, 1893.. | 260 00   |
| McKays Island.....                         | Jos. Harvey.....          | July 10, 1907..  | 380 00   |
| McQuestion Point.....                      | Elizabeth McLeod.....     | Feb. 22, 1904..  | 180 00   |
| Narrow Island.....                         | A. B. Boyter.....         | Jan. 3, 1898..   | *380 00  |
| Niagara, fog alarm.....                    | J. W. McMillan.....       | Nov. 30, 1910..  | 520 00   |
| " ".....                                   | Robert J. Allan.....      | July 19, 1907..  | 260 00   |

\* \$25.00 for fog Horn.

† From 1st April 1911.



STATEMENT giving names of stations and lightkeepers, &c.—*Continued.*ONTARIO DIVISION—*Continued.*

| Name of station.                | Name of lightkeeper.       | Appointed.        | Salary.  |
|---------------------------------|----------------------------|-------------------|----------|
|                                 |                            |                   | 8 cts.   |
| Nigger Island ..                | Carson Jeffrey ..          | April 28, 1904 .. | 320 00   |
| Nine Mile Point ..              | Stannes Veech ..           | Mar. 7, 1894 ..   | 980 00   |
| Nottawasaga Island ..           | J. F. Burmister ..         | May 2, 1904 ..    | *680 00  |
| Oakville Pier ..                | Maurice Felan ..           | April 28, 1894 .. | 260 00   |
| Onderdonk bluff ..              | E. Bryant ..               | Mar. 6, 1911 ..   | 140 00   |
| Otter Island ..                 | Robert McMenemy ..         | Nov. 17, 1903 ..  | *600 C0  |
| Owen Sound ..                   | Archibald McLean ..        | Dec. 23, 1897 ..  | 320 00   |
| Peelee Passage Middle ground .. | Stafford Bottom ..         | Nov. 12, 1910 ..  | 600 00   |
| " ..                            | F. Malott 1st assistant .. | Nov. 11, 1902 ..  | 500 00   |
| Peelee Passage ..               | Henry Amonite ..           | Nov. 12, 1910 ..  | 450 00   |
| Peninsula Harbour ..            | J. Blondin ..              | Oct. 14, 1910 ..  | *600 00  |
| Peter Rock ..                   | James Roddick ..           | Sept. 7, 1907 ..  | 680 00   |
| Pie Island ..                   | James Forbes ..            | April 1, 1908 ..  | 380 00   |
| Pigeon Island ..                | J. H. Davis ..             | May 16, 1896 ..   | 600 00   |
| Pointe au Baril ..              | Ole Hanson ..              | July 10, 1907 ..  | 440 00   |
| Pointe aux Pins ..              | Alexander McKinnon ..      | May 16, 1904 ..   | 520 00   |
| Point Clark ..                  | M. McDonald ..             | Jan. 8, 1897 ..   | *600 00  |
| Point Edward ..                 | Louis Knauff ..            | May 23, 1908 ..   | 260 00   |
| Point Peter ..                  | G. J. Scott ..             | June 6, 1901 ..   | 980 00   |
| Point Pleasant ..               | Frank Connor ..            | Oct. 13, 1898 ..  | 440 00   |
| Point Porphyry fog alarm ..     | Joseph Bousquet ..         | Aug. 11, 1908 ..  | 600 00   |
| Point Porphyry ..               | † Andrew Dick ..           | " 10, 1880 ..     | 450 00   |
| Port Arthur ..                  | J. C. Banks ..             | April 25, 1908 .. | 350 00   |
| Port Burwell ..                 | John Sutherland ..         | June 18, 1891 ..  | **520 00 |
| " Inner Range ..                | D. H. A. Fortier ..        | April 11, 1865 .. | 85 00    |
| Port Colborne ..                | Hugh Clarke, jr ..         | May 30, 1904 ..   | 550 00   |
| Port Colborne, F. A. ..         | John Miller ..             | Dec. 16, 1897 ..  | 1,180 00 |
| Port Credit ..                  | Bernard McGrath ..         | Oct. 2, 1907 ..   | 260 00   |
| Port Dalhousie ..               | Silas L. Butler ..         | July 15, 1897 ..  | 520 00   |
| Port Dover ..                   | R. M. Lowry ..             | Mar. 4, 1896 ..   | 440 00   |
| Port Elgin ..                   | Mrs. Jas. Grant ..         | June 29, 1907 ..  | 180 00   |
| Port Maitland ..                | John L. Oliver ..          | Dec. 16, 1907 ..  | *440 00  |
| Port Stanley ..                 | Herbert E. Smith ..        | April 29, 1898 .. | 440 00   |
| Presqu'Isle Main, Salt Point .. | W. B. Ainsworth ..         | Oct. 12, 1907 ..  | 400 00   |
| Presqu'Isle Main Fog Alarm ..   | John B. Sinclair ..        | Mar. 6, 1906 ..   | 600 00   |
| Providence Bay ..               | W. W. Rains ..             | Aug. 1892 ..      | *380 00  |
| Rains Wharf ..                  | Patrick O'Connor ..        | June 23, 1904 ..  | 120 00   |
| Rainy River ..                  | Adam Brown ..              | June 2, 1909 ..   | 380 00   |
| Red Rock ..                     | R. Armstrong ..            | Feb. 1902 ..      | *620 00  |
| Richards Landing ..             | W. R. Fellows ..           | Dec. 18, 1888 ..  | 100 00   |
| Rondeau ..                      | J. G. Dixon ..             | July 4, 1890 ..   | *520 00  |
| Rosseau ..                      | A. M. Rains ..             | Aug. 1, 1892 ..   | 180 30   |
| Sailors Encampment ..           | Peter McLean ..            | May 1, 1909 ..    | 180 00   |
| Sand Point ..                   | Angus McAulay ..           | Aug. 23, 1909 ..  | 85 00    |
| Saugeen ..                      | Cyrus R. Spencer ..        | April 7, 1903 ..  | 193 00   |
| Scotch Bonnet ..                | Alex. Clark ..             | Jan. 11, 1909 ..  | *520 C0  |
| Shaganash ..                    | Wm. Stevens ..             | Jan. 11, 1909 ..  | 320 00   |
| Shaguanadah ..                  | John L. McCluskie ..       | Sept. 11, 1909 .. | 150 00   |
| Shoal Island ..                 | Capt. J. Cross ..          | May 18, 1905 ..   | *335 00  |
| Silver Islet ..                 | A. B. Sutherland ..        | July 21, 1908 ..  | 180 00   |
| Slate Island ..                 | John Whitmarsh ..          | July 18, 1900 ..  | 680 00   |
| Snake Island ..                 | James Brown ..             | June 29, 1904 ..  | *350 00  |
| Southampton ..                  | John A. Ritchie ..         | Sept. 10, 1903 .. | 260 00   |
| South Baymouth ..               | Marcellus Vorce ..         | Nov. 21, 1902 ..  | 220 00   |
| South Bay Point ..              | Thomas Darling ..          | Jan. 31, 1891 ..  | 320 00   |
| South E. Bay ..                 | Fredk. Beachler ..         | July 2, 1903 ..   | 140 00   |
| South River ..                  | Neil McDougall ..          | April 25, 1901 .. | 180 00   |
| Squaw Island ..                 | Donald McKillop ..         | June 8, 1892 ..   | 320 00   |
| St Anicet Bar ..                | Thos. M. Cowan ..          |                   | 380 00   |
| Stagg Island ..                 |                            |                   | 260 00   |

† Retired O. S. C., Dec. 23, 1910.

\*\* \$25, Fog Bell.

\* \$25 for Fog Horn.

SESSIONAL PAPER No. 21

STATEMENT giving names of stations and lightkeepers, &c.—*Concluded.*

ONTARIO DIVISION—*Concluded.*

| Name of station.                       | Name of lightkeeper.       | Appointed.       | Salary.  |
|--|----------------------------|------------------|----------|
|  |                            |                  | \$ cts.  |
| Stokes Bay .....                       | Alexander Smith. ....      | May 14, 1908..   | 320 00   |
| Strawberry Island.....                 | William McKenzie.....      | May 4, 1893..    | *440 00  |
| Strewsbury .....                       | C. Thompson .....          |                  | 50 00    |
| Stripling Point.....                   | David Humes.....           | Aug. 27, 1902..  | 320 00   |
| Sulphur Island.....                    | William Birch.....         | Aug. 1, 1910..   | 380 00   |
| Supple Point.....                      | C. J. Kelly.....           | Oct. 11, 1909..  | 150 00   |
| Success Island.....                    | Temiskaming Navigation Co. |                  |          |
| Telegraph Island.....                  | Geo. A. Rowe.....          | Oct. 25, 1895..  | 320 00   |
| Thames River.....                      | H. J. Cartier.....         | Oct. 18, 1884..  | 520 00   |
| Thessalon.....                         | James Harvey.....          | Nov. 28, 1897..  | *440 00  |
| Thornbury.....                         | Robert Lowe.....           | April 12, 1887.. | *140 00  |
| Thunder Cape.....                      | William Craig.....         | May 17, 1892..   | 1,180 00 |
| Tobermory.....                         | Archibald Currie.....      | Oct. 12, 1903..  | 320 00   |
| Thomahawk Island.....                  | Thomas Sweeney.....        | Sept. 19, 1902.. | 320 00   |
| Toronto, East Pier.....                | George McKelvie.....       | June 13, 1905..  | 1,180 00 |
| Trenton.....                           | C. W. Spicer.....          | May 5, 1903..    | 190 00   |
| Victoria Harbour, Ottawa River.....    | Chas. Berzie.....          | Oct. 15, 1910..  | 180 00   |
| Victoria Island.....                   | George Cosgrave.....       | Nov. 14, 1899..  | *520 00  |
| Welcome Island.....                    | Adolphe Perras.....        | May 10, 1906..   | 980 00   |
| Western Islands.....                   | T. J. Richardson.....      | June 27, 1901..  | 1,180 00 |
| West Sister Rock.....                  | John Thibault.....         | Dec. 7, 1905..   | 520 00   |
| Whisky Island and Penetanguishene..... | Christopher Columbus.....  | Mar. 18, 1893..  | 440 00   |
| Whitby.....                            | Port Whitby Hbr. Co. Ltd.. | May 1, 1905..    | 100 00   |
| Warton.....                            | Wm. Gilbert.....           | Sept. 13, 1907.. | 100 00   |
| Wicket Point.....                      | Anson Shortt.....          | Oct. 13, 1909..  | 380 00   |
| Wilson Channel.....                    | H. G. Duncan.....          | Aug. 25, 1905..  | 440 00   |
| Wolf Island.....                       | Wm. Gillespie.....         | Mar. 17, 1885..  | 320 00   |

MANITOBA.

|                            |                     |                 |         |
|----------------------------|---------------------|-----------------|---------|
| Black Bear Island.....     | Wm. Hughes.....     | Feb. 12, 1892.. | 400 00  |
| Cox Reef.....              | ** Wm. Doré.....    | Aug. 6, 1908..  | *425 00 |
| George Island.....         | A. A. T. McKay..... | Dec. 6, 1909..  | *460 00 |
| Gull Harbour.....          | T. Fjeldsted.....   | May 6, 1904..   | *260 00 |
| Gimli.....                 | E. G. Thompson..... | Jan. 21, 1910.. | 80 00   |
| Red River Range.....       | William Hughes..... | Feb. 12, 1892.. | 520 00  |
| Warren Landing Ranges..... | Hugh McDonald.....  | Aug. 14, 1907.. | 400 00  |

\*\* Wm. Doré died 13th Dec. 1909 and A. A. T. McKay, George Island, has been appointed in his stead at an initial salary of \$460, O.I.C. 31st March 1910. John Tumster, appointed to George Island 31st March 1910.

\* \$25 for Fog Horn.

STATEMENT giving names of stations and lightkeepers, &amp;c.—Continued.

## BRITISH-COLUMBIA.

| Name of station.                  | Name of lightkeeper.          | Appointed.          | Salary. |       |
|-----------------------------------|-------------------------------|---------------------|---------|-------|
|                                   |                               |                     | \$      | c.    |
| Active Pass.....                  | H. Georgeson .....            | July 21, 1884...    | 1,170   | 00    |
| Alberni.....                      | Geo. A. Patterson.....        | July 6, 1910.....   | 180     | 00    |
| Amphitrite Point.....             | G. W. Grant.....              | April 2, 1906.....  | 390     | 00    |
| Berens Island.....                | S. G. Harrison.....           | Nov. 4, 1897.....   | 517     | 50    |
| Brockton Point.....               | W. D. Jones.....              | Aug. 20, 1890.....  | 517     | 50    |
| Brotchie Ledge.....               | Thos. Sparks.....             | Jan. 1, 1903.....   | *180    | 00    |
| Bare Point.....                   | T. R. Stevenson.....          | .....               | 270     | 00    |
| Ballenas Island.....              | W. Betail.....                | Oct. 3, 1901.....   | 1,170   | 00    |
| Birnie Island.....                | G. Rudge.....                 | May 2, 1905.....    | 390     | 00    |
| Balfour.....                      | J. W. Gallup.....             | Jan. 1, 1900.....   | 210     | 00    |
| Cape Beale.....                   | W. L. Thompson.....           | Sept. 16, 1908..... | 1,770   | 00    |
| Carmanah Point.....               | W. P. Daikin.....             | Nov. 4, 1890.....   | 1,770   | 00    |
| Cape Mudge.....                   | J. Davidson.....              | June 27, 1898.....  | 570     | 00    |
| Coffin Island.....                | No keeper .....               | .....               | .....   | ..... |
| Crofton Light.....                | R. Allan.....                 | May 31, 1907.....   | 270     | 00    |
| Discovery Island.....             | M. A. Croft.....              | April 1, 1902.....  | 1,170   | 00    |
| Dryad Point.....                  | C. Carpenter.....             | Nov. 7, 1899.....   | 517     | 50    |
| Dock Island.....                  | Gas lights operated by agency | .....               | .....   | ..... |
| Danger Reef.....                  | R. Harrap.....                | April 15, 1903..... | 150     | 00    |
| Denman Island.....                | J. A. McMillan.....           | Aug. 15, 1906.....  | 570     | 00    |
| Entrance Island.....              | M. G. Clark.....              | Nov. 26, 1897.....  | 1,470   | 00    |
| Egg Island.....                   | Jas. Forsythe.....            | July 10, 1909.....  | 1,545   | 00    |
| Estevan Point.....                | J. P. Jensen.....             | April 1, 1907.....  | 1,500   | 00    |
| Fisgard.....                      | J. Gosse.....                 | Oct. 13, 1909.....  | 502     | 50    |
| Fiddle Reef.....                  | D. H. McNeill.....            | Mar. 21, 1905.....  | 570     | 00    |
| Fraser River Lights and Garry Pt. | A. A. Parker.....             | July 1, 1907.....   | 570     | 00    |
| Gallows Point.....                | Western Fuel Co.....          | May 1, 1906.....    | 120     | 00    |
| Green Island.....                 | Alex. Dingwell.....           | Feb. 11, 1911.....  | 1,320   | 00    |
| Helen Point.....                  | Daniel Tom.....               | Mar. 2, 1910.....   | 180     | 00    |
| Ivory Island.....                 | F. Reuter.....                | May 2, 1905.....    | 1,170   | 00    |
| Kyuquot Light.....                | A. Ellis.....                 | Jan. 21, 1906.....  | 390     | 00    |
| Kootenay Landing.....             | C. P. R. Co.....              | .....               | 120     | 00    |
| Lawyer Island.....                | F. W. B. Elsterman.....       | April 1, 1905.....  | 780     | 00    |
| Lennard Island.....               | R. Pollock.....               | July 1, 1908.....   | 1,600   | 00    |
| Lucy Island.....                  | J. O. Ouellette.....          | July 6, 1910.....   | 817     | 50    |
| Merry Island.....                 | W. T. Franklin.....           | Jan. 8, 1904.....   | 570     | 00    |
| North Arm Lights.....             | James Quinn.....              | April 1, 1909.....  | 345     | 00    |
| Nanaimo Harbour.....              | H. B. Shaw.....               | June 12, 1907.....  | 330     | 00    |
| Point Atkinson.....               | W. Erwin.....                 | Oct. 5, 1880.....   | 1,320   | 00    |
| Portlock Point.....               | W. J. Gillespie.....          | Nov. 1, 1905.....   | 607     | 50    |
| Prospect Point.....               | Jno. Grove.....               | July 7, 1898.....   | 517     | 50    |
| Pointer Island.....               | Jas. Codville.....            | Dec. 26, 1899.....  | 607     | 50    |
| Portier Pass.....                 | F. Allison.....               | Nov. 15, 1902.....  | 570     | 00    |
| Procter.....                      | G. W. Gallup.....             | Jan. 1, 1900.....   | 390     | 00    |
| Pilot Bay.....                    | E. Montreuil.....             | Oct. 17, 1907.....  | 570     | 00    |
| Pine Island.....                  | A. B. Gurney.....             | April 1, 1907.....  | 1,770   | 00    |
| Pultney Point.....                | E. Hukla (temporary).....     | Feb. 1, 1907.....   | 570     | 00    |
| Pachena Point.....                | W. R. Pillar.....             | Sept. 5, 1907.....  | 1,600   | 00    |
| Quatsino Light.....               | N. C. Nelson.....             | Jan. 29, 1907.....  | 502     | 50    |
| Race Rocks.....                   | F. Eastwood.....              | " 21, 1891.....     | 1,770   | 00    |
| Saturna Island.....               | Jas. Georgeson.....           | Oct. 26, 1889.....  | 900     | 00    |
| Sand Heads Lt. Ship.....          | M. O'Brien.....               | " 1, 1904.....      | 1,470   | 00    |
| Sisters.....                      | B. Blanchard.....             | Feb. 20, 1905.....  | 1,020   | 00    |
| Sechelt.....                      | Gas Beacon (No keeper).....   | .....               | .....   | ..... |
| Scarlet Point.....                | Wm. Hunt.....                 | Sept. 24, 1908..... | 562     | 50    |
| Sechart Light.....                | G. Strickland.....            | Mar. 27, 1908.....  | 270     | 00    |
| Sooke Light.....                  | A. Codtel.....                | April 15, 1907..... | 210     | 00    |
| Trial Island.....                 | H. O'Kell.....                | Aug. 20, 1906.....  | 1,470   | 00    |
| Victoria Harbour.....             | Thos. Sparks.....             | Jan. 29, 1903.....  | 180     | 00    |
| Walker Rock.....                  | Gas Light (No keeper).....    | .....               | .....   | ..... |
| Yellow Island.....                | John Doney.....               | May 1, 1905.....    | 1,020   | 00    |
| Yugerot Light.....                | H. T. W. Smith.....           | .....               | 480     | 00    |

\* \$10.00 for operating Fog Alarm.





Heavy field of frazil ice from 60 to 80 feet in thickness. Portneuf, Feb. 1911.



Heavy field of frazil ice from 60 to 80 feet in thickness. Surface of ice standing 6 feet above water level. Portneuf, Feb. 1911.





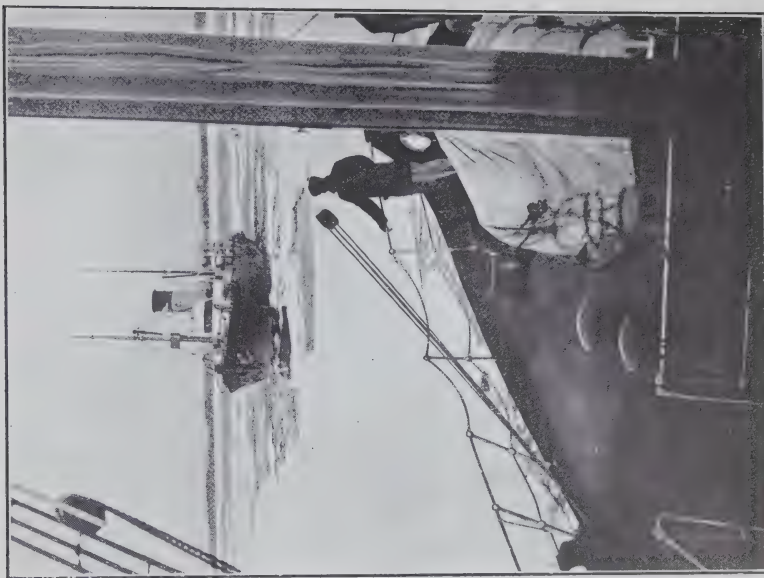


Piece of heavy frazil ice in the act of turning over. Portneuf, Feb. 1911.





Breaking up a heavy batture at Quebec Bridge, Feb. 1911.



"Lady Grey" and "Montcalm" working at Port St. Francis, April, 1911.







"Lady Grey" and "Montcalm" working in Lake St. Peter, March, 1911.



"Lady Grey" working above Sorel in packed ice from three to four feet in thickness, April, 1911.





"Lady Grey" at the instant of striking the ice.



"Montcalm" just after striking the ice.





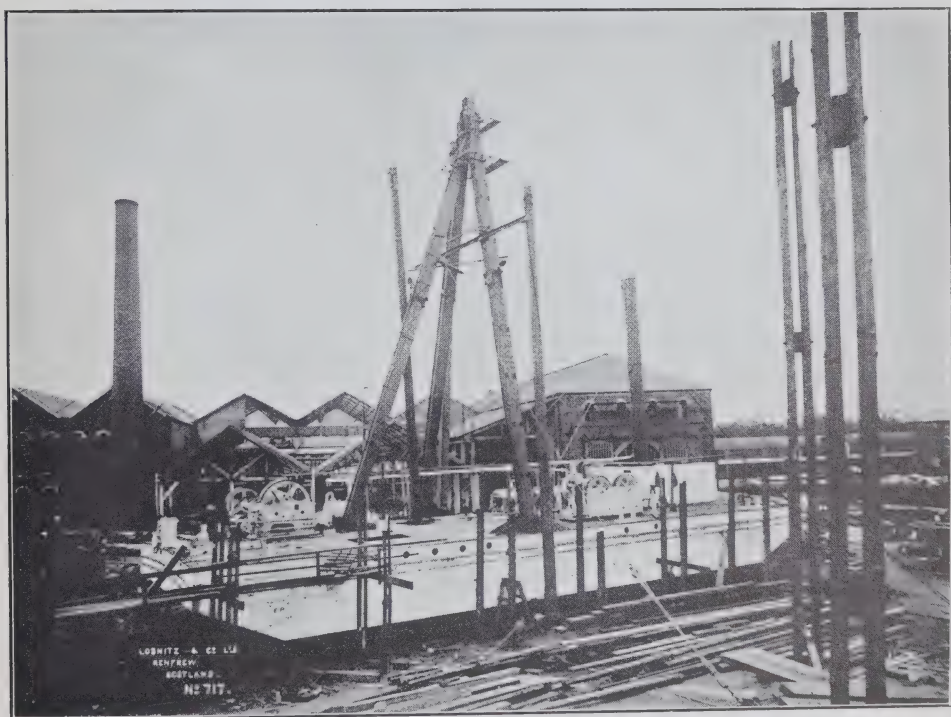


Experimental 20 Ton Rock-cutter, working in the Cap à la Roche Section, River St. Lawrence Ship Channel. (Stern view, looking up stream).



Experimental 20 Ton Rock-cutter, working in the Cap à la Roche Section, River St. Lawrence Ship Channel. (Side view, looking North.)





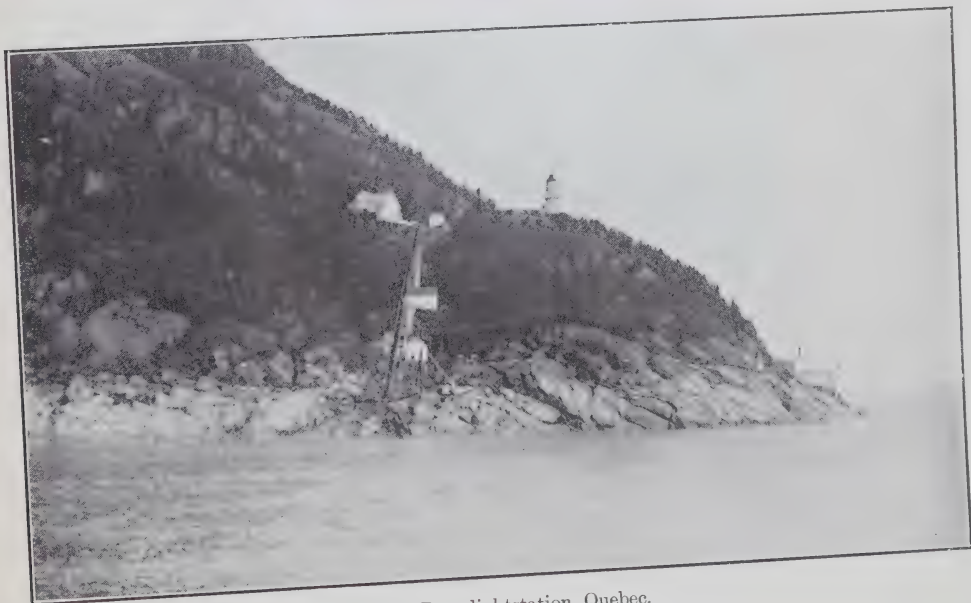
22 Ton Rock-cutter, for work in the Cap à la Roche Section, River St. Lawrence Ship Channel,  
being built by Messrs Lobnitz & Co. Ltd. Renfrew, Scotland.





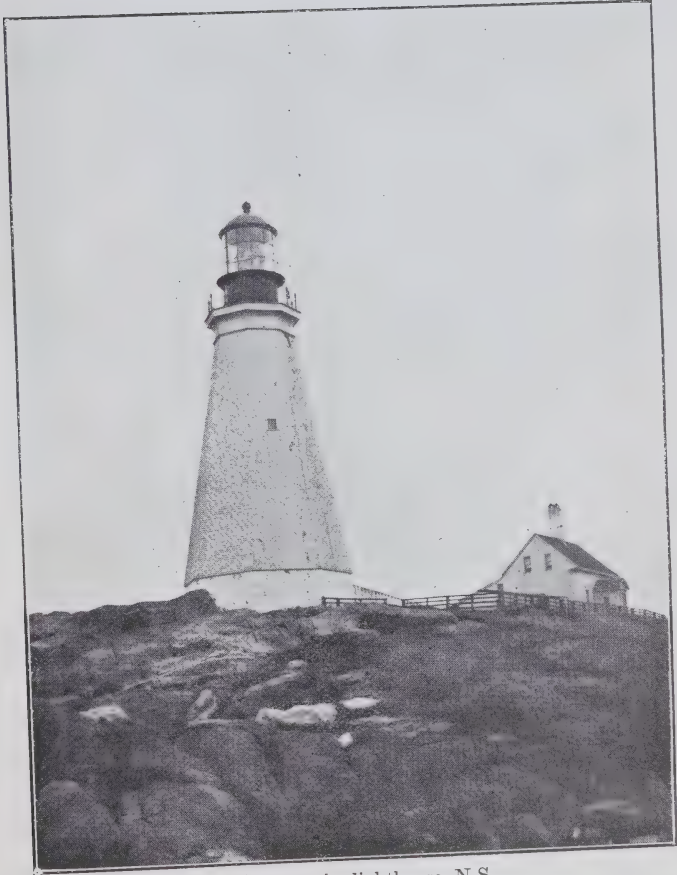


Machias Seal Island lightstation, N.B.



Cape Dogs lightstation, Quebec.





Cape Fourchu lighthouse, N.S.







The Motor Life-boat Banfield, B.C.



Life-boat Station, Southampton, Ont.





U. S. S. "Stanley" cutting icebound vessels out of Bridgewater, N.S.







C. G. S. "Stanley" cutting icebound vessels out of Bridgewater, N.S.



CANADA.  
TITLE: FORTY-FOURTH ANNUAL REPORT OF THE DEPT. OF  
MARINE AND FISHERIES 1911. MARINE.

| DATE | NAME | DATE | NAME |
|------|------|------|------|
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